

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA

JULIUS W. Hobson, et al.

:

Plaintiffs

:

v.

Civil Action No. 82-65

:

CARL F. HANSEN, et al.,

Defendants

:

*10:00 815 Conn  
Fifth-floor*

RESEARCH MEMORANDUM FOR PLAINTIFFS

by Stephan Michelson,

assisted by

John Michael Gray

Eugene Millstein

Polly Harold

November 27, 1970





## CHAPTER I

### INTRODUCTION

The following document is intended as a submission to the United States District Court for the District of Columbia, in the Civil Action No. 82-66, Julius W. Hobson, et al., Plaintiffs, v. Carl F. Hansen, et al. The data employed herein all have been submitted to the Court by the Defendants. In eight following chapters we outline the basic inequities in the Washington, D. C. school system (Chapter 2), outline our basic disagreements with Defendants' Memorandum of November 17th, 1970.

The issue is simple: *this is not the issue* does the District of Columbia school system discriminate in favor of the few majority white schools at the expense of the rest of the city. We claim to demonstrate that this is the case. We claim that the Defendants' arguments have been insubstantial and incorrect, and Plaintiffs' arguments have been essentially correct.

*New issue not relevant*

We will argue (Chapter 4) that inadequate and incorrect data has been given us, and that some of the methods employed in arguing from that data have been illegitimate. We will present evidence (Chapter 5) that the District schools have not taken advantage of the opportunities they have had to distribute students more equitably among schools. We will demonstrate (Chapter 6) that Defendants' arguments that economies of scale justify differential spending among schools of differing size cannot explain the expenditure differentials observed. We will examine the variation in teacher expenditure per pupil among schools, and determine how much of that variation is due to differential teacher salaries, how much to differential pupil-teacher ratios (Chapter 7), We will

*not the issue*





examine the consequences of applying the order to equalize per pupil-teacher expenses within 5 percent of the mean (Chapter 8), which was the subject of this Court's Show Cause Order of September 2, 1970. We will conclude with a summary of findings and recommendations (Chapter 9).

The Senior author of this paper is Stephan Michelson, a Research Associate at the Center for Educational Policy Research, Harvard University; Research Associate at the Center for Law and Education, Harvard University, and Lecturer at the Harvard Graduate School of Education. Prior to his appointment to Harvard, he served in the following positions:

Research Associate, The Brookings Institution  
September, 1966 - September, 1968

Instructor of Economics, Reed College  
September, 1964 - June, 1966

In addition he has been a Visiting Instructor of Economics at Stanford University, and has been consultant to the U. S. Office of Education, the New York State Department of Education, the National Urban Fellows, The Center for the Study of Public Policy, The Research and Development Center at the Stanford University School of Education The American Friends Service Committee, and other organizations. He received his B. A. degree with honors from Oberlin College in 1960, and his Ph.D. in Economics from Stanford University in 1968.

John Michael Gray and Eugene Millstein, students at the Harvard Graduate School of Education, have ably assisted in this work. Gray is a graduate of Exeter College, Oxford University, and Millstein is a graduate of Reed College, with a M.A.T. degree from Harvard



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Graduate School of Education. Polly Harold (B.A., Newton College of the Sacred Heart) also assisted with calculations, including programming for the IBM 360 at Harvard University.





## CHAPTER II

### BASIC DATA ON THE WASHINGTON, D. C. SCHOOLS

In this chapter we will simply set out some basic calculations which we have performed from the data supplied by the Corporation Counsel to the United States District Court. In later chapters we engage in a complicated, sophisticated analysis of these data. The basic findings will remain substantially as they appear from the argument in this chapter. Schools west of Rock Creek Park are favored, at the expense of schools elsewhere. Schools receiving Title I money are slightly favored, and schools in Anacostia pay the cost of the favoritism elsewhere.

We will begin by looking at three figures: pupil-teacher ratios, average cost per teacher, and average teacher cost per child, in several areas of the city. These calculations appear in Table II-1, for fiscal year 1970, and in Table II-2 for 1971. Comparisons between areas appear in Table II-3. These tables show that not only are there inequities, and not only do these inequities favor the schools west of Rock Creek Park -- but this favoritism increased over the time period considered here. For example, schools west of the park had a pupil-teacher ratio 13.1 per cent smaller than schools in Anacostia, in fiscal 1970. In fiscal 1971 the difference is 18.9%. Similarly, schools west of the park received teacher expenditures per pupil which were 31.5% greater than





in Anacostia schools in fiscal 1970. In fiscal 1971 the difference is up to 44.1%.\*

In Table II-4 we compare the area west of Rock Creek Park to the remainder of the city. Though we compute pupil-teacher ratios differently from the defendants, we concur with their findings reported on page 42 of Defendants' memorandum, November 16, 1970. There they show that the pupil-teacher ratio of schools west of the park is lower than the city-wide average. We find that the same is true, and that the difference is larger in fiscal 1971 than in 1970.

\*Our figures diverge slightly from those offered by defendants. We have made all calculations ourselves, from data supplied by the defendants, and we believe our calculations, at least, to be correct. We have excluded Special Schools from these calculations, as explained below in Chapter 4.





TABLE II-1  
ELEMENTARY SCHOOLS  
(excluding special schools)  
Fiscal '70 (1969 - 1970)

	West of Park	Anacostia	Title I	City-wide
Pupil-teacher ratio	21.27	24.49	21.21	22.67
Average teacher cost	\$11,734.39	\$10,277.45	\$10,160.53	\$10,219.70
Teacher expenditures per pupil	\$ 551.80	\$ 419.58	\$ 478.92	\$ 450.90

OK

Note: These calculations are based on the data submitted to the Court, labelled "Revised Editions of the Charts Which Were Filed With The Court On November 2, 1970."

Data were not available for Amidon, Blair-Ludlow-Taylor, Madison, Sumner, Tubman. Leckie is a new school in Fiscal 1971.

Special schools are excluded: Blow-Pierce, Bundy, Grant, Lenox Annex, and Military Road.



TABLE II-2  
ELEMENTARY SCHOOLS  
Data for Fiscal, '71 (70-71)\*  
(excluding special schools)\*\*

	West of Park	Anacostia	Title I	City-wide
Pupil-teacher ratio	\$ 19.57	\$ 24.12	\$ 20.26	\$ 22.11
Average teacher cost	\$12,580.67	\$10,785.90	\$11,033.83	\$11,079.93
Teacher expenditures per pupil	\$ 642.91	\$ 446.03	\$ 544.67	\$ 501.20

\*Data were not provided for Blair -Ludlow-Taylor and Hayes

\*\*Special schools excluded Bundy, Military Road, Blow-Pierce.





TABLE II-3  
DIFFERENCES BETWEEN WEST OF PARK ELEMENTARY SCHOOLS  
AND ANACOSTIA ELEMENTARY SCHOOLS

	Fiscal 1970			Fiscal 1971		
	West of Park	Anacostia	Advantage of West of Park	West of Park	Anacostia	Advantage of West of Park
Pupil-teacher ratio	\$ 21.27	\$ 24.49	13.1% smaller +	\$ 19.57	\$ 24.12	18.9% smaller
Average teacher cost	\$11,734.39	\$10,277.45	14.2% greater o	\$12,580.00	\$10,785.00	16.6% greater
Teacher expenditure per pupil	\$ 551.80	\$ 419.58	31.5% greater	\$ 642.91	\$ 446.03	44.1% greater

See footnotes for tables I and II for details on data.

+ The percentage is computed  $\frac{24.49 - 21.27}{24.49}$

o The percentage is computed  $\frac{11,734.39 - 10,277.45}{10,277.45}$





TABLE II-4  
ELEMENTARY SCHOOLS  
(excluding special schools)

Fiscal '70

	West of Park	Remainder of City	West of Park Advantage
Pupil-teacher ratio	\$ 21.27	\$ 22.73	6.4% smaller
Average teacher cost	\$11,734.39	\$10,144.13	15.7% greater
Teacher expenditures per pupil	\$ 551.80	\$ 446.19	23.7% greater

Fiscal '71

Pupil-teacher ratio	\$ 19.57	\$ 22.23	12.0% smaller
Average teacher cost	\$12,580.67	\$11,007.05	14.3% greater
Teacher expenditures per pupil	\$ 642.91	\$ 495.14	29.8% greater





In Fiscal 1970, 1,702 children were bussed, largely from overcrowded schools. 1,139 were bussed east of the Park and 563 west of the Park. There are no "predominantly white" or even "majority white" schools east of the Park although two-thirds of the children bussed went to east of Park schools\*. Only one-third went to schools west of the Park; not all of these were "majority white". Indeed a child bussed in Fiscal 1970 stood only a 19.4% chance of going to a "majority white" school; in Fiscal 1971 this increased to 23.6%, largely because fewer children volunteered for bussing to east of Park schools.\*\*

Bussing figures however are only meaningful when compared to the potential number of places available for bussing children into. There were in fact three times as many places in Fiscal 1970 in "majority white" schools that could have been utilized without threat to the white majority nature of these schools than were utilized.

\* See Table II-5

\*\* See Table II-6





TABLE II-5

Bussing East and West of the Park: Fiscal 1970 and 1971

	West of Park	East of Park	Total	% Bussed West of Park	% Bussed East of Park
Fiscal 1970	563	1139	1702	33.1%	69.9%
Fiscal 1971	548	972	1520	36.5%	63.5%

TABLE II-6

Percentage bussed to "majority white" schools\*

	West of Park "Majority White"	West of Park "other"	East of Park "Majority White"	East going to of "Majority Park White" "other" schools	%
Fiscal 1970	330	233	0	1139	19.4%
Fiscal 1971	359	189	0	972	23.6%

\* For a fuller discussion of this breakdown by rule see Chapter 5.  
Page II-8





## CHAPTER IV

### SOME GENERAL ARGUMENTS CONCERNING DATA AND METHODS

*Let them go, their data good!*

In this chapter we will attempt briefly to explain some of the difficulties we have had with the data submitted by the defendants, and with the procedures they have employed to argue their case. This is not a complete list of our problems--we will mention others when the need arises. Nor, except in this general statement, ~~can we make clear how much apparently good and interesting data was presented.~~ In commenting throughout on the errors of calculation, we will necessarily omit detailing the number of calculations we have checked and found to be accurate. But the number of problems, poor, misleading, or simply inaccurate data presentations, is too great to make reference to only in passing footnotes.

#### I. The Need for Consistent Data

*OK*

We urge this court in the future to demand one "standard" filing of data, to give defendants time to compile the data, and to insist that all arguments by both sides be based on that data. There can be a period in which plaintiffs request more data, defendants check, then submissions, etc. But at some point there should be a set of data which is attested to as the "standard" set, and on which all arguments on both sides should rest. We will discuss two examples of data difficulties in this light: data on children receiving free lunch, per school, and new data on enrollment, and pupil-teacher ratios.



A. Needy Lunch Children

The number of children per school receiving free lunches is submitted by defendants, starting on page 23 of Defendants' Memorandum of November 17.

This measure may be superior to the data on family income in the census tract of the school for 1959 because it is more timely and because it depicts the income of the families of the pupils attending the school rather than the income of the school's neighborhood at large.

However, the intent of this submission is not to replace the 1959 census tract data, but to resuscitate it. The scatter diagrams which they try to employ in their argument are based on these data.

In defendants' submission to the court on August 21, 1970, they claimed that rank-order correlation was "appropriate to the comparison of two ranked listings," and they calculated a rank order correlation between 1959 income and per pupil expenditure of  $-.08$ . "This indicates that no relationship exists between the variables under consideration, i.e., the per-pupil expenditure by the District of Columbia Public School System, at any specified school building is independent of the median family income in its neighborhood."

The correlation is invalid, however, defendants claimed in their next paragraph, which we reproduce in full:

Inasmuch as the data on per pupil expenditures and those of family income are based on information collected ten years apart, it is difficult to make any meaningful interpretation of the figures. The foregoing conclusion is valid only if the same pattern of family income exists in 1970 as was evident in 1960. Although statistical data are not yet available from the Bureau of the Census,





it is manifest that, in a substantial number of instances, the economic level in census tracts on the periphery of the central core of the city has changed materially.

We have been unable, in the time since the defendants' submission arrived, to correlate this lunch data with the 1959 income data. Defendants produce a grouped correlation, that is, a relationship between schools grouped by income level and the percent of needy children per group. We will demonstrate below, in discussing defendants' "economies of scale" argument, that a perfect grouped correlation may be derived from a weak correlation in the data. We will demonstrate also that some individual correlation may be spurious. We simply do not have the facilities to check arguments using new data so quickly, and suggest that if arguments are to proceed on new data, that data should be submitted at least two weeks before the argument is made.\*

However, let us deal with this attempt to resuscitate the 1959 income data, after it had been declared dead by the defendants themselves. In the first place, we must comment that the data was ranked only because the school department chose to rank it. This information is numeric, cardinal, and thus amenable to ordinary Pearson Product-Moment correlation.

\* This has proved to be a fortuitous inadequacy, as defendants notified us by telephone on November 25 that some of these figures were incorrect. We feel somewhat paralyzed in our attempt to analyze defendants' data, fearing that they will be revised at any moment.





The correlation between per pupil expenditures in fiscal 1970 and 1959 income is in fact  $+0.053$ ; small, but positive. The correlation between per pupil teacher expenditures in fiscal 1970 and 1959 income (before bussing) is  $.100$ , and this is significant at the 10% level on a one-tailed test.\* If defendants really wish to revive this data, they will have to live with it.

This correlation, though probably significant, is nonetheless not large. Nor should we expect it to be: zero-order correlations (i.e., correlations uncontrolled for other factors) have no place in a case such as this. For example, when we exclude Special Schools, as a control, the correlation between teacher expenditures and 1959 income rises to  $.172!$ \*\* So we are not sure if defendants wish to use these 1959 data or not. They do not seem favorable to their case\*\*\*

More importantly, if we are to believe both the 1959 income data and the free lunch data, then it is clear that the children who are bussed to schools west of Rock Creek Park are among the most affluent in their neighborhoods. The percentage of "needy" children is exaggerated with respect to Social Security Administration poverty guidelines. The document

\* We note that, given plaintiff's argument, this is the relevant test.

\*\* Calculated for 123 schools in fiscal 1970.

\*\*\* We will discuss the relevance of correlation techniques to the argument before the court below in this chapter.



reproduced on page 24 of Defendants' November 17 Memorandum shows that a family of four is eligible for free lunches if its income is \$4650 or less. The poverty threshold for 1969, for a non-farm family of four, was \$3743. Thus, families are still considered "needy" in terms of school lunch with \$907 more income, or 24 percent more income than the ordinary poverty guidelines.\* We would expect, therefore, that the reporting of "needy" children from the school lunch program will overstate the percentage of poor as ordinarily calculated. If these data are accurate, and if they show a small percentage of poor west of Rock Creek Park schools, then, since they are biased upwards, the actual percentage of poor children must be even lower.

Fiscal 1971 \*\*

Percent "needy" west of Park of total enrollment = 5.3%

Percent "needy" east of Park of total enrollment = 40.9%

This raises serious questions about the school's bussing program, to which we address ourselves below in our discussion of that program. It raises equally serious questions about the

\* See U.S. Department of Commerce, "Selected Characteristics of Persons and Families, March, 1970", Current Population Reports P-20, No. 204.

\*\* Calculated from enrollment data and free lunch data submitted with Defendants' Memorandum of Nov. 17, revised by telephone, November 25. We were informed on Nov. 25th that the free lunch data were incorrect for Morgan and Morgan Annex. We have therefore omitted these two schools from all calculations connected with the above table. We further note that between September 21, 1970 data and October 22, 1970 data the total enrollment in D.C. elementary schools rose from 89,300 to 89,988. We used the latter figure in the above calculations.





propriety of calculating adjusted school 1959 income using the mean income of the neighborhood from which children are bussed, when clearly higher than average income children are in fact bussed. Detailed tables on this subject will appear in Chapter 5. Here we present our calculation of the percent of needy children in schools west of the park, compared to the percent which could have been in these schools given the number of children bussed to these schools. We will detail in Chapter 5 what percentage of needy children could have been bussed to these schools under a diligent program. For now we are merely demonstrating that if one is to accept defendants' argument that we can tell how many needy children were in each school, then the bussing program must have "creamed" children of higher income than that of their sending school neighborhoods.

Fiscal 1971

<u>School</u>	<u>Number bussed</u>	<u>Needy</u>	<u>Percent needy</u>
Eaton	41	27	65.9
Fillmore	66	17	25.8
Hardy	78	12	15.4
Hearst	44	17	38.6
Hyde	45	15	33.3
Jackson	66	19	28.8
Janney	79	16	20.2
Key	68	23	33.8
Mann	43	17	39.5
Murch	<u>18</u>	<u>10</u>	<u>55.5</u>
	548	173	31.5

In the above calculations we are assuming that all needy children per school were bussed in, where that was possible.



This again biases the figures against our argument, for the more needy children already in a school, the fewer were bussed in, and the lower the percent needy of the total bussing program. At best, therefore, less than one-third of the pupils bussed to schools west of the Park are needy.

The last argument about the late submission of the free lunch data, and dependants' reliance on it, is that these figures are probably inaccurate indicators of poverty anyway. Defendants argue that a good data source would be "the number of pupils who qualify for free lunches in each school."\*

The data they submit is on the number of children "participating in the free lunch program."\*\* A Committee of the U.S. Senate heard evidence in 1970 that participation in and qualification for this program are not synonymous, and not necessarily highly correlated. Bruno Bettelheim: "After 24 years, this nation's school lunch program reaches 20 million children; however, it feeds only 3 million of the 8 million most in need."\*\*\* Dr. Arnold E. Shaefer: "It's obvious that our feeding programs have been damned ineffective."\*\*\*\*

\* Defendants' Memorandum, p. 23, emphasis added.

\*\* Ibid., p. 25, emphasis added.

\*\*\* Forward to "Why Child Nutrition Programs Fail" by Rodney E. Leonard, reprinted in Hearings before the Select Committee on Nutrition and Human Needs of the U.S. Senate, 91st Congress, 2nd Session, Part 2 (1970), p. 518.

\*\*\*\* Dr. Shaefer is director of the National Nutrition Strategy Program of the U.S. Department of Health, Education and Welfare. This quotation comes from an article in the Washington Post, April 28, 1970, reprinted in Hearings, op. cit., p. 516.





"Dr. Jean Mayer said two-thirds of America's indigent children are not reached by the school lunch program."\*

We seriously question defendants' utilization of data of known poor quality to justify utilizing another data set of previously admitted irrelevance. We have shown that use of either set of data would strengthen plaintiff's case. We have not had time to keypunch the school lunch data for computer analysis, nor, unless defendants persist in using it, do we wish to make the effort.

#### B. New Enrollment and Teacher-Pupil Ratios

Accompanying their November 17, 1970 Memorandum defendants presented several bodies of data. One gives the pupil-teacher ratio for each school. These figures are based on enrollments and teacher counts from September 21, 1970. However, defendants tells us not to use these data, because "Preliminary figures for October 22, 1970 indicate a decrease in the range of pupil-teacher ratios." We find that the data defendants rely on changes constantly, either from corrections of errors or from updating. We would appreciate, as we have urged above, one standard set which we could analyze with the confidence that defendants would not question the data, protest as they might about the analysis.

\* Dr. Mayer was President Nixon's special advisor on health needs. Quotation from the Modesto (California) Bee, September 11, 1969; reprinted in Hearings, op cit., p. 503.



However, the pupil-teacher ratios are not acceptable data. "Teacher count include [sic] counselors and librarians, special teachers, and special subject teachers. Teachers of the retarded and handicapped and corresponding special class enrollments were omitted."\* We are not sure what it means to say that special teachers are included but teachers of the retarded and handicapped are omitted. We are especially not sure what this implies about Bundy, Blow-Pierce, and Military Road schools, which (except Blow) are special--and, we had thought, for the handicapped.

The basic problem with these data, however, is in the inclusion of non-teachers. We have never before encountered a pupil-teacher ratio which included counselors and librarians. If the ratios of librarians to teachers, special subject teachers (whom, we assume, do not have regular classrooms) to regular teachers, etc. is not constant among schools, then this figure cannot be interpreted. Certainly, the level of these figures is artificially lowered by the inclusion of special personnel. These ratios are surely far below the average class size in most schools, and we cannot even be sure that class size and pupil-teacher ratios are highly correlated.

The pupil teacher ratios filed on November 17 are also difficult to understand in that when they are divided into enrollment figures given in the same submission, they yield fractional numbers of teachers. For example, the enrollment at Beers

\* Defendants' data addition to Memorandum of November 17, footnote 2.





elementary school is 849. When this is divided by the pupil-teacher ratio 22.5, it should yield the number of teachers. However, in this case, as in most others, the result--37.73--is an unlikely number with which to describe the number of teachers in the school.

We have therefore refrained from using the pupil-teacher ratios given to us in this document. As noted in Chapter 2, we calculated our own ratios from data submitted by the defendants separately on teachers and pupils. For fiscal 1971, using data submitted in defendants' revised submission to the court, the data may be accurate. We checked defendants' calculations on teacher salaries without longevity, for example, where degree status was taken from defendants' submission in Book II of their three volumes, which referred to teachers in fiscal 1970. Our figures agree with their, by and large. Therefore we have used our own pupil-teacher ratio calculated from their data, and presumably correct, deleting special schools, but otherwise including all teachers but not librarians and counselors. Area summaries from these calculations have been presented above in Chapter 2.

If these data are accurate--and they are at least consistent--why are the data for fiscal 1970 seemingly inaccurate? Taking the data submitted from defendants' revised submission of November 6, we calculated the average teacher cost per school. For total number of teachers, we added the individual teachers by degree as given us in Book II, noted above, and presumably utilized by defendants in their adjusted teacher calculations



of November 17, submission. In Table IV-1 we list some anomalies: average teacher cost below and above the salary schedule, and near the extremes of that schedule.

We note that we are not claiming that the total teacher cost data are inaccurate. The error could lie there, or in the detailed teacher data. If the error lies in the latter area, then defendants' calculation of adjusted teacher expenditure is inaccurate. In addition, our calculation of pupil-teacher ratios based on these data, summarized above, is inaccurate, as are our regression results presented below. If the error lies in the total teacher cost per school, then all work on teacher cost per school must be inaccurate with respect to fiscal 1970--our work and defendants' work. This includes our regression results on teacher expenditure per school presented below. (Table IV-1)

We remind the court that we have used these data in good faith, and at great expense. Yet they have little credence. We present our arguments on these data, because defendants have used the same data (we presume) for their arguments. Defendants will be seen to have badly analyzed their own data, but what the real facts of the matter are we do not know.





TABLE IV-1

Schools with Suspect Teacher Data  
Average Teacher Salary

<u>Low Salaries</u>		<u>High Salaries</u>	
Below Range:		Above Range:	
Powell Annex	\$4,674	Hyde	\$20,582
Savoy	5,723	Edmonds	16,667
Brent	5,989	Nichols Ave.	16,275
Eckington	6,984		
Bottom of Range:		Top of Range:	
Garfield	\$7,978	Hearst	\$15,615
Eaton	8,617	Stanton	13,983
Green	8,826	Key	13,904
Plummer	8,870	Grimke	13,364
		Powell	13,274
		Brookland	13,124



## II. Special Schools

Defendants have presented expenditure comparisons without adjusting for special schools or special students. They claim, however, to be attempting to meet a pupil-teacher ratio of 14 in the special schools, which certainly makes these schools exceptional. Special students are blind, deaf (or near these extremes), mentally retarded or emotionally disturbed. They require special teachers who, we assume, are paid at rates above the regular salary schedule.

Since both the teacher-pupil ratio and the salary are higher than normal in special schools we expect--and find--special schools spending considerably more per child than regular schools.\* It is therefore illegitimate to include these special schools--which are all east of Rock Creek Park--in comparisons of expenditures east and west of the Park. The defendants consistently include these schools. We will consistently exclude them. They were excluded, for example, in the list of schools with impossible range expenditures (Table IV-1), and in all summary data presented in Chapter 2. We will at all times explain how we have handled the special schools when presenting our findings.

Which schools are Special? Defendants consider Bundy, Military Road and Pierce as Special Schools. However, in fiscal 1970, Lenox Annex enrolled only special students, and Grant had 62 special students out of a student enrollment of 126. For

\*This is less true, for some reason, in fiscal 1971 than in fiscal 1970.





fiscal 1970, therefore, we considered these five schools as special. Expenditure data is consistent with this interpretation of the data on special students. In fiscal 1971, having no data on special student enrollment, we have considered only defendants' three schools as Special.

### III. Capacity

Capacity figures are given by the Corporation Counsel based on a regular classroom holding 30 pupils. At times overcrowded schools east of the Park are considered "not severely" overcrowded, when slightly over capacity. Capacity is, surely, an arbitrary figure, and we hold no quarrel with its definition.

We will note, however, that the District seems content to get schools down to 100% capacity, without making any attempt to get up to 100%. That is, with the mean capacity at about 83% for the city, it is not clear why getting a school down to 100% should be considered satisfactory. In addition, we understand that the schools west of Rock Creek Park have larger rooms, on the average, than those schools east of the Park. If this is true, then one might consider that being close to 100% capacity was at least not more of a hardship west of the Park than east, and possibly less of a hardship.

### IV. Grouping Schools West of the Park

Defendants have taken pains to criticize plaintiffs for lumping all thirteen schools west of the Park into one group. We think this is a reasonable criticism.



It is respectfully submitted that the Court errs when it considers the 13 elementary schools west of Rock Creek Park to be a monolith of white and rich pupils. The Court's decree has worked substantial changes in the character of these elementary schools.\*

In analyzing the data submitted by the defendants it has become clear that schools west of the Park do not, indeed, comprise a "monolith of white and rich pupils." We have separated those schools into two groups. This was done simply by taking those schools less than 50% white, and asking if they could not be described as part of this "monolith". These schools were Hyde, Fillmore, Jackson and Hardy. In fiscal 1971, data for Key is given together with Hardy. In addition, defendants indicate that Key is properly part of this group.

Bussing of pupils from overcrowded schools to under-utilized schools west of Rock Creek Park has changed not only the economic composition but the racial composition of the receiving schools as well . . . For example, Jackson has a 96% Black enrollment; Hyde has a 52% Black enrollment; Fillmore has a 46% Black enrollment; Hardy has a 50% Black enrollment; Key has a 37% Black enrollment.\*\*

We have identified the above five schools as "Group I" schools. Group II schools comprise the rest of the schools west of the Park:

Group I

Fillmore  
Hardy  
Hyde  
Jackson  
Key

Group II

Eaton  
Hearst  
Janney  
Lafayette  
Mann  
Murch  
Oyster  
Stoddert

\* Defendants' Memorandum of November 17.

\*\* Defendants' Memorandum, p. 22; our emphasis.





This distinction, then, is made solely on the basis of the percent white in these schools, buttressed by defendants' linking them together. We shall find that this grouping is an analytically powerful one. It does turn out that these schools also have an interesting geographical definition, Group I schools being closest to the Potomac River of all schools west of the Park.

#### V. The Relevance of Correlations

Plaintiffs' case is that some schools, essentially the eight in Group II west of the Park, are favored in school administration at the expense of the other schools, except Special Schools and Model Schools (which are deliberately chosen for compensatory programs). These eight schools have 2891 children or 3.1% of the elementary school students in fiscal 1971. Correlating the values of any two variables over all schools is not the proper way to determine if there is such favoritism. The variation occurring among schools east of the Park may not correspond to the same pattern as that between east and west of the Park. For example, schools with relatively high income east of the Park might have less teacher expenditures per student than relatively poor areas. This negative relationship within east of Park schools would counter-act the important positive relationship between east of the Park and west of the Park.

This is not just a theoretical argument. It is, first of all, important politically: if school decision-makers do not recognize or care about income (or percent black) variations



within black dominated populations, but do care about the difference between black and white neighborhoods, then the effect described above is possible and even likely. Gross discrimination could be hidden behind an overall small correlation. It is wise, given the political realities of Washington, D.C., and given the argument in this case, to investigate the difference between schools west of Rock Creek Park and other schools. Because it is an easily identifiable black area, Anacostia is a good comparison area.

Secondly, our argument is not just theoretical and political. It is real. Within Anacostia we find that the higher the 1959 income associated with a school, the lower the per pupil expenditure. This relationship does not imply that a considerably more wealthy area will have even lower per pupil expenditures. We find a significant effect of being in an Anacostia school vis a vis the wealthier rest of the city, with a correlation of  $-.273$ .<sup>\*</sup> Similarly, we find a correlation of  $+.334$  for teacher expenditures between Rock Creek Park and the rest of the city. The partial correlation between teacher expenditures in schools west of the Park and elsewhere is even higher when Model Schools are accounted for.

When there is an attempt to determine a general relationship for the entire city, then overall correlation techniques may

<sup>\*</sup> This correlation is calculated from 123 non-special schools, for fiscal 1970 data. A binary variable was given the value 1 for Anacostia schools, 0 for all other schools. The correlation for 128 schools including the special schools, was  $-.233$ .





valid. With these techniques, however, we can test whether the relationship ascribed to the entire city holds for the sections we have noted (Anacostia, Model Schools, all schools west of the Park, or Group I and Group II west of the Park.) For example, in Chapter 7 below, when discussing the relationship between pupil-teacher ratios and size of school, we show that there is no single relationship in all these parts of the city. We have already noted that such relationships will not hold in Special Schools, and that correlational analysis requires some control for these schools. (We favor the ultimate control: exclusion from the data.)

We are critical, therefore, of the attempt by defendants to reply to plaintiffs' argument by use of a technique which is virtually designed to mask the verity of plaintiffs' allegations. Our arguments below rest on comparisons between schools west of Rock Creek Park and the rest of the city. Our regression analyses separate west of the Park and Model Schools from the rest, and control for special students as explained above. (Where significant, Anacostia schools are also separated from the rest of the city.)



## BUSSING AND BUILDING IN THE DISTRICT OF COLUMBIA

Defendants have offered analyses of their efforts to reduce overcapacity in Part I of their Memorandum of November 17. Their argument is based on a non-sequitur which we have already pointed out in Chapter III:\*

By effective utilization of this additional space, the defendants have succeeded in reducing the city-wide average pupil-teacher ratio to 20.9-1.

The decline in the overall pupil-teacher ratio says nothing at all about effective utilization of space. That is a statement about the distribution of pupil-teacher ratios which, we shall see, is not random with respect to Rock Creek Park. We find it difficult to counter an argument which does not exist. Therefore, we will proceed to discuss defendants' claims without being bound to their line of argument. In this Chapter we will investigate the District bussing program, especially as it has affected overcrowding in schools. We will proceed in two parts: First, we look at who was bussed, where, with what results, and in comparison to what potential. Second, we offer a brief analysis of the relative effects of building and bussing -- and the decline in student population -- in reducing overcrowding.

I. The D. C. Bussing Program

The number of children bussed in any year is the result of offers to bus, the physical conditions of bussing, conditions at the sending and receiving schools, and the preferences of parents. Defendants

\*Defendants' Memorandum of November 17, page 6, emphasis theirs.





would have us believe that parents do not like bussing,\* but we are more inclined to view parental choice in this regard as a function of the circumstances just mentioned, not an absolute like or dislike. We do note, from evidence submitted by defendants, that construction of 250 demountable classroom units--space for 6,250 students at 25 per unit--was accompanied by a reduction in bussing of only 182 students.\*\* We do not argue that, even given good bussing conditions and good receiving schools, parents would prefer bussing to good neighborhood schools. We do not pretend to know what parents want. But we must stress that their behavior seems to indicate a preference for bussing over currently offered neighborhood schools. The reduction in bussing may reflect many factors, including the kinds of schools to which the children were bussed. This is not a matter which is out of the control of the defendants. Therefore we shall

\*On page 16 of the Defendants' Memorandum we find:

Pupils, teachers and parents enthusiastically endorse the use of demountables to relieve overcrowding. See the attached article written by Lawrence Feinberg in the Washington Post.

In fact, only principals and teachers are quoted in the article, not pupils nor parents.

\*\* Difference in bussing figures between 1969-70 and 1970-71. See article by Lawrence Feinberg, "Prefab Classrooms Ease Crowding in Anacostia Schools," Washington Post (date unknown), submitted with Defendants' Memorandum of November 17. Feinberg indicates a greater reduction in bussing than defendants' data.



analyze the bussing experience of fiscal 1970 and fiscal 1971 to see if perhaps the actions of defendants themselves, and not the abhorrence of parents for bussing, is the cause of the reduction in the number of children bussed.

#### A. Defining Preferred Schools

A parent deciding whether to bus his child will presumably weigh advantages against disadvantages. One advantage he will count is the generally regarded quality of the receiving school. If Plaintiff's argument that certain white schools are favored over the majority of (black) schools is true, then the percent white in a school is some indicator of quality. We stress that we are not saying, and not assuming that parents contend, that the fact of a school having white children makes the school better because the children are in any way different from black children. But if, because of the presence of whites--especially whites west of Rock Creek Park--the school is favored with lower pupil-teacher ratios, better teachers, more challenging materials, etc., then the percent white will be an accurate indicator of quality. The black parent may not give a damn about the color of the children with whom his son or daughter attends school, but he may care about the school, its attitudes, policies, and resources.

On this argument we will look at two kinds of schools to which parents may prefer to send their children: Those which are  $\frac{1}{3}$  or more white, but not as much as  $\frac{1}{2}$  white, we will denote by the symbol  $W'$ . Those which are  $\frac{1}{2}$  or more white we





we will denote by the symbol W". We will occasionally remind the reader of these definitions.

B. Bussing West of the Park

From data relating to September 21, 1970, we calculate the following percentage white for our two groups of schools west of the Park:

<u>Group I</u> *		<u>Group II</u>	
Fillmore	54% white	Eaton	81% white
Hardy	49%	Hearst	77
Hyde	47%	Janney	81
Jackson	4%	LaFayette	95
Key	63%	Mann	65
		Murch	91
		Oyster	84
		Stoddert	90
<hr/> <hr/> True Average 47.2% white		<hr/> <hr/> 85.3% white	

Thus all Group II schools are in the W" category of 50% or more white schools. Group I schools are in W" (Fillmore and Key), in W' (Hardy and Hyde), and not in either category (Jackson).

Children are bussed both east and west of the Park. However, there are no schools east of the Park which qualify as either W' or W". We can calculate the change in bussing to W' and W" schools from west of the Park data only:

	<u>Fiscal 1970</u>	<u>Fiscal 1971</u>
W' schools	141	123
W" schools	330	359

\* Figures obtained from "Membership of Elementary Schools on September 21, 1970." The percentage white B for 1970-71. No data on 1969-70 racial distribution were available to us.



In Fiscal 1970, 563 children were bussed west of the Park, and 471 of them (83.6%) to W' or W" schools. In Fiscal 1971, 548\* children were bussed west of the Park, and 482 (87.9%) of them to W' or W" schools. However, in Fiscal 1970, 1702 children were bussed altogether, and in Fiscal 1971, 1520 children.\*\* Thus, in Fiscal 1970 a child had a 27.7% chance of being bussed to a W' or W" school, and in Fiscal 1971 this improved to 31.7%. It seems strikingly possible, in view of the virtual constancy of the actual numbers--and the relative shift to W" schools--that the reason a larger percentage of bussed children are in W' and W" schools is because children bussed to other schools have dropped from the program.\*\*\* Only 19.4% of bussed children were received by W" (Majority white) schools in 1970; 23.6% in 1971.

\* This figure is obtained by transforming the percentages of "Total Pupils Bussed in from:" in the table on p. 22, Defendants' Memorandum. The actual bussing figures for the whole D.C. system have not been submitted to us for 1970-71.

\*\* See Defendants' Memorandum, p. 12.

\*\*\* Indeed, we have calculated the ratio of children bussed west of the Park in 1971 to those bussed west in 1970; and, similarly, for bussing east of the Park. Bussing west of the Park decreased by only 2.7% from 1970 to 1971, whereas it decreased by 14.7% east of the Park.





The importance of these figures, however, lies not in their absolute magnitude, but in their relationship to what could have been achieved. We have calculated the number of empty places in schools after bussing, the number of children bussed, and hence the total capacity available for bussing children. We offer these percentages of available capacity utilized by bussing in Table V-1. There we see that utilization of capacity declined for both groups between 1970 and 1971. It was lower in W" schools than W' schools in Fiscal 1970, and equal in 1971. In terms of schools arranged by Group I and Group II, including Jackson which is neither W' or W", the following was the case:

Percent of Available Capacity Utilized by Bussing\*

	<u>Fiscal 1970</u>	<u>Fiscal 1971</u>
Group I	35.9	30.9
Group II	23.9	25.7

Utilization of available capacity was lower for Group II schools than for Group I schools in both years, though closer in the latter year due mostly to the decline in utilization of available capacity in Group I schools.

By actually utilizing available capacity, some schools currently classified as W" would change, with the influx of blacks, to W', and the W' schools would cease to be "white" at all. Therefore we have calculated available capacity in

\* Figures obtained for 1969-70 from submitted table dated August 7, 1970, "Enrollment Capacity Ratio (30-1) With and Without Bussing as of June 1970," and "Membership of Elementary Schools on September 21, 1970."



TABLE V-1

Percent of Available Places Filled by Bussing to W' and W"  
Schools.\*

	<u>Fixed 1970</u>			<u>Fixed 1971</u>		
	<u>Spaces</u>	<u>Bussed</u>	<u>%</u>	<u>Spaces</u>	<u>Bussed</u>	<u>%</u>
W'	600	233	38.8	655	189	28.9
W"	1115	330	29.6	1264	359	28.4

\* Figures obtained for 1969-70 from table submitted dated August 7, 1970, "Enrollment Capacity Ratio (30-1) With and Without Bussing as of June 1970" and "Membership of Elementary Schools on September 21, 1970."



W" schools restricting use of this capacity to maintain at least 50% white.\* We find, under this criterion, 732\*\* available places in W" schools west of Rock Creek Park. That is, there were three times as many places available in majority white schools that could have been utilized without threat to the majority white nature of these schools than were utilized.

### C. Examples of Bussing Possibilities: Sending Schools

Since current figures on bussing are not available to us, we will use Fiscal 1970\*\*\* figures to investigate bussing policies from the point of view of the sending schools. We are not here actually advocating increased bussing from these schools. We are merely exploring ways in which the additional capacity demonstrated above might have been efficiently utilized. The issue is historic. It may, however, cast some light on the good faith of the defendants given their argument that they have

\* We grant that this assumes that the white children would stay in these schools under this increased bussing, but we have seen no argument that this would not be the case. We argue elsewhere that the D.C. norm of 83.8% enrollment-capacity is now the relevant one for judging capacity distribution. Therefore, it may be the case that west of Park Schools should not expand above this percentage.

\*\* This figure was computed for 1970-71 from the table "Membership of Elementary Schools on September 21, 1970." It was assumed that spare capacity could be used to bus blacks into W" schools, maintaining the 50% white membership of these schools. In fact, another 260 places are available west of the Park in W" schools but to bus black children into them would turn them into W' schools.

\*\*\* From "Enrollment Capacity Ratio With and Without Bussing as of June, 1970."





followed the court's order to achieve racial balance by bussing.

<u>Draper:</u>	<u>No.</u>	<u>% of Capacity</u>
Capacity	1218	
Enrollment pre-bussing	1729	141.1
Enrollment post-bussing	1365	112.1
No. of children bussed	364	
Overcrowding post-bussing	147	

Draper sent to West of the Park:

	<u>Children</u>	<u>No. of Busses</u>	<u>Spare capacity in receiving school*</u>
Hardy	93	2	114
Janney	51	1	170
Key	71	2	105

Since busses appear to take up to 56 children each (Hendley to Nichols Ave. took 113 children in 2 busses) more children could have been sent to Key without adding another bus. The remainder of Draper's overcrowding could have been "solved" by sending 2 more busses to Janney.

\* Capacity of a W' or W" school is so defined as not to change its racial character. No W" school, for example, is made majority black in these examples.



<u>Moten:</u>	<u>No.</u>	<u>% of Capacity</u>
Capacity	1068	
Enrollment pre-bussing	1535	143.7
Enrollment post-bussing	1215	113.8
No. of children bussed	320	
Overcrowding post-bussing	147	

Moten sent to west of the Park:

	<u>Children</u>	<u>No. of Busses</u>	<u>Spare capacity in receiving school</u>
Fillmore	78	2	121
Mann	43	1	117

More children could have been bussed to reduce Moten's overcrowding by providing just one additional bus.

<u>Turner:</u>	<u>No.</u>	<u>% of Capacity</u>
Capacity	840	
Enrollment pre-bussing	1104	131.4
Enrollment post-bussing	1011	120.4
No. of children bussed	93	
Overcrowding post-bussing	171	

Turner sent children to these schools, all W", west of the park:

	<u>Children</u>	<u>No. of Busses</u>	<u>Spare capacity in receiving school</u>
Eaton	37	1	122
Hearst	33	1	35
Murch	24	1	-34

The 24 children sent to Murch caused that school to fill to overcapacity (105.7%). Turner was the only school sending children to Murch, which was over 100% capacity before children





were bussed to it. Both Eaton and Hearst, to which busses already were dispatched from Turner, are closer to Turner than Murch, and had enough spare capacity to take these 24 children. Three more busloads of children from Turner, at least one of which could have gone to Eaton, would have solved Turner's overcrowding.

#### D. Bussing to Relieve Overcrowding

In fiscal 1970, 66.9% of the children bussed were sent to schools East of the Park. We suggest that this figure might have influenced the decline in the number bussed in fiscal 1971 (of which 63.9% are bussed east of the Park). Furthermore, in fiscal 1970, regarding only the schools which were already bussing out children, another 1273 children would have had to have been bussed to reduce the operating capacity of the sending schools to 100%. This is detailed in Table V-2. Over half of these children, as has been pointed out, could have been bussed to W" schools without affecting the majority white nature of these schools.

The overall capacity utilization rate before bussing west of the park was 34.5%. In the schools receiving bussed children, the rate was 55.9% before bussing. In the schools east of the park receiving bussed children, the utilization rate was 67.3%. Children were bussed into those schools west of the park which were already operating at utilization rates above the average for west of the park, and even more children were bussed east of the park to schools which were operating, before bussing, at even higher capacity utilization rates.



TABLE V-2

Bussing to Relieve Overcrowding\*  
(1969-70)

	Enrollment capacity ratio pre-bussing	Enrollment capacity ratio post-bussing	No. more to be bussed to get down to <u>100% capacity</u>
Draper	141.1%	112.1%	146
Garfield	126.1	105.2	45
Hardy (& Annex)	114.1	100.1	2
Ketcham (& Annex)	158.8	148.5	378
Kimball	131.8	126.7	281
McGogney	91.9	89.9	0
Moten	143.7	113.8	147
Orr	133.1	113.6	53
Simon	112.8	104.6	50
Green	85.2	81.3	0
Turner	131.4	120.4	<u>171</u>
Total in bussing schools:			1273

\* From "Enrollment capacity ratio with and without bussing as of June, 1970."



#### E. Bussing To Achieve Racial Balance

Defendants note that, of schools west of Rock Creek Park, "Jackson has a 96% black enrollment, Hyde has a 52% black enrollment, Fillmore has a 46% black enrollment, Hardy has a 50% black enrollment, Key has a 37% black enrollment."\* These schools exactly comprise our Group I. In contrast, bussing has had relatively little effect on the racial composition of Group II schools.\*\* We have calculated the racial composition of these schools before bussing, to determine the impact of bussing on that composition. To do this we assumed that all children bussed were black. Given this assumption, we merely subtracted the number bussed from the total number of blacks, and divided the remaining black figure by the sum of these blacks and the whites in each school. The results of this calculation appear in Table V-3.

The average percent black in Group I schools is 11.2% before bussing, and 52.7% after bussing. Group II schools have 5.9% average blacks before bussing, 14.4% after bussing. Group I schools have been made almost five times as black as they were, but Group II schools were made only just over twice as black. In other words, schools which were white to begin with have not been brought into racial balance to the

\* Defendants' Memorandum of November 17, page 22.

\*\* We note that this is a near tautology, since we have defined these groups by their racial composition. It is nonetheless remarkable that the defendants agree exactly with our separation of schools west of the Park into the same two groups.





TABLE V-3

Racial Composition of Schools West of the Park, Fiscal 1970,  
Before and After Bussing.\*

<u>School Group I</u>	<u>% Black Pre-bussing</u>	<u>% Black Post-bussing</u>
Fillmore	0	46.3
Hardy	6.8	50.6
Hyde	20.9	52.7
Jackson	86.2	95.8
Key	<u>0</u>	<u>37.2</u>
	11.2%	52.7%

<u>School Group II</u>		
Eaton	8.7	18.7
Hearst	4.0	23.3
Janney	0	19.1
Lafayette	5.9	5.9
Mann	15.1	35.2
Murch	6.5	9.4
Oyster	16.0	16.0
Stoddert	<u>10.3</u>	<u>10.3</u>
	5.9%	14.4%

\* Figures from "Membership of Elementary Schools on September 21st, 1970." and numbers bussed (transformed from percentages) on p. 22, Defendants' Memorandum, "1959 Median Family Income Adjusted for Schools Receiving Students from Neighborhood of Different Income Levels."



extent that schools which initially had more blacks have been.

From our previous calculations on the number of black children who might have been bussed west of the Park, maintaining white majorities in W" schools, we are able to ask how effective the bussing program has been west of the Park. We take the percent black possible minus the percent black before bussing as the space within which the bussing program operated. The percent black after minus the percent black before is the impact of the program. The ratio of these two figures gives a measure of the relative successful effort expended to achieve racial balance:

$$\text{Success} = \frac{\% \text{ black after} - \% \text{ black before}}{\% \text{ black possible} - \% \text{ black before}}$$

The success in achieving racial balance, relative to potential, in schools west of the Park, is given below:

	<u>Group I.</u>		<u>Group II</u>
Fillmore	92.6	Eaton	31.9
Hardy	100.0*	Hearst	48.2
Hyde	100.0	Janney	38.9
Jackson	100.0	Lafayette	0
Key	<u>74.4</u>	Mann	57.5
True average	85.0%	Murch	38.7
		Oyster	0
		Stoddert	<u>0</u>
		True Average	28.1

\* Hardy, Hyde and Jackson, being already majority black, are considered to have no more capacity for blacks.





It should be obvious that of schools west of the Park, the Group II schools are not just whiter, but are definitely favored in effort to reduce that percent white.

#### F. Bussing of Needy Children

In the Lawrence Feinberg article referred to above, Bradford A. Tatum, administrator in charge of the bussing program makes two puzzling statements:

"There's no long line of parents waiting for their kids to be bussed."

"[I have] to turn down many requests from Negro parents for transfers to schools West of the Park."

The only way these two statements can both be true is if the parents who request transfer to schools west of the Park are already in the bussing program. We have argued above that there should be more bussing to schools west of the Park: that there is capacity, that it would relieve overcrowding, that it is mechanically feasible with only a few more busses, that it would aid in achieving racial balance. Yet, Mr. Tatum argues that to accept these transfer requests would aggravate socio-economic imbalance. We will investigate this claim and find it false.

We will assume throughout that all the needy children in a school with bussing were bussed into that school. This biases the figures against our argument that bussing has been ineffective. We will use here the data presented by defendants on November 17, in which participation in the free lunch



program is the definition of need. On page 21 of their memorandum the defendants submit that:

When pupils are bussed to receiving schools West of Rock Creek Park, the income levels are substantially different, producing socio-economic integration.

On page 23 they argue that:

Currently the best available method of identifying the presence of low-income pupils in the elementary schools of the District of Columbia is through the information on the number of pupils who qualify for free lunches in each school. This measure may be superior to the data on family income in the census tract of the school for 1959 because it is more timely and because it depicts the income of the families of the pupils attending the school rather than the income of the school's neighborhood at large.

Of the 323 children bussed to Group I schools in Fiscal 1971 86 or 26.7%, were needy. Of the 225 children bussed to Group II schools 103, or 45.7%, were needy. However the percentages of the entire school who are thus needy are quite a bit smaller. These figures are as follows:

Free Lunch Children as a Percentage of Enrollment

Group I		Group II	
Fillmore	12.7	Eaton	7.2
Hardy	7.2	Hearst	7.7
Hyde	13.4	Janney	4.2
Jackson	20.0	Lafayette	0
Key	<u>12.5</u>	Mann	9.3
True Average	12.4	Murch	1.7
		Oyster	4.8
		Stoddert	<u>1.1</u>
		True Average	3.6

We have commented extensively above on the unreliability of data on participation in the free school lunch program. Accepting



that data for the moment as a measure of low-income children in schools, the percentage of needy children in schools west of the Park as given above is:

Group I schools	12.4%
Group II schools	3.6%

From Table V-4 we see that Group I schools could have accommodated 50% needy children and Group II schools could have accommodated 26.2% needy children. Group I schools therefore succeeded to 47.6% of their potential capacity for needy children, whereas Group II schools succeeded to only 13.7% of their capacity.\* Certainly we cannot agree with defendants' statement that:

The racial and socio-economic mix has changed in the elementary schools west of Rock Creek Park as a result of volunteer bussing. Many of these schools have a majority of black pupils and the economic level of the population has declined.\*\*

\* Potential is calculated by assuming that non-needy bussed children are replaced by needy children, and schools are filled (not to exceed 50% black) with needy children. Then the actual percentage needy divided by this potential gives the figures in the text. These figures are biased upwards by the assumption that all needy children in these schools were bussed in.

\*\* Defendants' Memorandum of November 17, p. 41





TABLE V-4

## Potential Help to Needy Children Through Bussing (Fiscal 1971)\*

School	Capacity	Spare Capacity	Needy Children	Children Bussed	Potential Extra Children Bussed	Total Potential Needy Children	Potential Up To 50%	Potential Capacity
<b>GROUP I</b>								
Filmore	270	136	17	66	49	202	135	50%
Hardy	330	164	12	78	66	242	165	50%
Hyde	240	128	15	45	30	163	120	50%
Jackson	270	175	19	66	47	241	135	50%
Key	300	117	23	68	45	185	150	50%
	<u>1410</u>					<u>1033</u>	<u>705</u>	<u>50%</u>
<b>GROUP II</b>								
Eaton	510	135	27	41	14	176	176	34.5%
Hearst	300	81	17	44	27	125	125	41.7%
Janney	600	223	16	79	63	302	300	50%
Lafayette	690	27	0	0	0	27	27	3.9%
Mann	300	118	17	43	26	161	150	50%
Murch	630	32	10	18	8	50	50	7.9%
Oyster	300	7	14	0	0	21	21	7.0%
Stoddert	300	116	2	0	0	118	118	39.3%
	<u>3630</u>					<u>964</u>	<u>951</u>	<u>26.2%</u>

\* It is assumed that bussing needy children should only take place up to 50% of capacity taken by needy children. Without this constraint another 341 places would become available. Figures taken from "Membership of Elementary Schools on Sept. 21, 1970"; pp. 25-26 of Defendants' Memorandum, "Needy Lunch Children by School, October 21, 1970"; and p. 22 "1959 Median Family Income Adjusted."



## II. Bussing vs. The Building Program: An Analysis

Defendants have exaggerated the importance of their building program in reducing overcapacity. In addition, they have presented a financial analysis of their demountables-placement program which is seriously in error. We will discuss these two issues in turn.

### A. Building to Reduce Overcrowding

In its opinion of June 19, 1967, the Court found that of 131 elementary schools in the District of Columbia, only 40 were at or under 100% capacity whereas 91 were over 100% capacity. By contrast pupil enrollments as of September 21, 1970 clearly show that overcrowding at the elementary school level has been all but eliminated.\*

The relevant comparison is no longer with 100%. The D.C. school system is operating at 83.8% in Fiscal 1971. Once again it is the distribution of actual capacities, not the presence above or below a defined 100% that counts. Defendants argue that:

. . .the most important factor leading to the elimination of overcrowding has been the Capital Outlay Program . . . the Board's stated commitment to construct schools in the far northeast, the areas of the greatest overcrowding, has dramatically resolved the overcrowding problem.\*\*

We are not entirely certain what schools make up the "far northeast" but we have investigated those in the area between and north of the Baltimore and Ohio's R.R. Co. tracks to Baltimore via Ellicott City and to Baltimore via Bladensburg. The defendants on their bar chart (page 5) show that in the "Far NE" they have built 396 "permanent seats" between 1968-70. Since we can account for the construction of 390 seats in the schools

\*Defendants' Memorandum of Nov. 17, p.

\*\*Defendants' Memorandum, p. 4.





in the area defined above (LaSalle, Woodridge, Bunker Hill, Burroughs, Langdon, Slowe, Noyes) we believe we are discussing the same area (in the period 1968-70).

These 7 elementary schools in fiscal 1971 had a total enrollment of 5976 pupils and a total capacity of 6570; the enrollment-capacity ratio (including the use of demountables) was therefore 90%. However, in 1968-69 the D.C. school population had already begun to decline (1968-9 to 1970-71 it declined 4%) and in fact without any building whatsoever the enrollment-capacity ratio would have declined from 101% in fiscal 1968 to 96% in fiscal 1971 in these schools. Declining population alone would have reduced these schools to less than 100% capacity. Declining population and building contributed about equally to the decline to 90% of capacity, no children having been bussed from these schools. see Table V-5.

In the "Far Southeast" (which we have defined as the area South of the Suitland Parkway and East of the Potomac River: the schools Turner, Green, McGogney and Annex, Congress Heights and Annex, Draper, Simon, Hendley, Leckie and Patterson) the Board of Education can rightly claim to have "dramatically" reduced if not "resolved" the problem of overcrowding. Faced by a situation of 134% enrollment in these 9 schools in 1968 they have succeeded in reducing this to 81.4% in fiscal 1971, and this in a situation where they were faced by a rising school population (See Table V-6).



TABLE V-5

ADMs and Capacities 1968-71 in the  
Far Northeast

<u>School</u>	<u>Fiscal 68 ADM</u>	<u>Fiscal 70 ADM</u>	<u>Fiscal 70 ADM</u>	<u>Fiscal 68 Capacity</u>	<u>Fiscal 71 Capacity</u>
LaSalle	1030	981	919	990	990
Woodridge	607	562	522	570	690
Bunker Hill	1158	1050	1012	1116	1116
Burroughs	919	848	828	918	978
Langdon	675	838	793	738	858
Noyes	659	631	732	708	738
Brookland- Noyes*	1199	1284	1170	1140	1200
	<u>6247</u>	<u>6194</u>	<u>5976</u>	<u>6180</u>	<u>6570</u>

\* Brookland and Slove have been combined since they were given this way in fiscal 1968 data.

NOTE: Figures taken from "Membership of Elementary Schools on September 21, 1970"; "Average Teacher Expenditure 1969-70"; and "Elementary Schools Fiscal Years 1963, 1965, 1968."



TABLE V-6

ADMs and Capacities 1968-71 in the  
Far Southeast (South of Suitland Parkway)\*

<u>School</u>	<u>Fiscal 68 ADM</u>	<u>Fiscal 70 ADM</u>	<u>Fiscal 71 ADM</u>	<u>Fiscal 68 Capacity</u>	<u>Fiscal 71 Capacity</u>
Turner	944	1036	959	720	1366
Green	1360	1167	1200	1166	1416
McGogney (+ Annex)	1352	1512	1449	1056	2106 ** (1656)
Congress Hts. (+ Annex)	901	1206	1331	480	1556
Draper	1394	1167	1130	980	1130
Simon	1197	1174	1175	960	1530
Hendley	1327	1710	1902	1056	1716
Leckie	not built	not built	602	not built	1076
Patterson	1292	1277	775	1050	1290
	<u>9967</u>	<u>10249</u>	<u>10523</u>	<u>7468</u>	<u>13186</u>
					<u>-450</u>
					(12936)

\* See previous table -1 for derivation of figures.

\*\* See text.





Two things concerned us, however, about the quality of the data submitted on these schools:

McGogney and McGogney Annex - In data submitted to us "Elementary School Membership on September 21, 1970", the combined enrollment of the two schools is listed as 1451, with McGogney providing 1056 regular seats and the Annex another 1050 (in demountables) giving a total capacity of 2106 and a surplus of 655 seats for the two. In data submitted to us at a later date with the Defendants' November 6th Memorandum we notice that the capacity total is still the same for McGogney but that that of the Annex has fallen by 450 seats to a total of only 600 seats (presumably in demountables) - all in the space of less than a month.

Congress Heights and Annex - From the September 21st data on the distribution of whites and blacks between the Main school and the Annex, a disturbing picture emerges (which hopefully is the result of a typographical error):

	Black	White	Total	%Black	%White	Enrollment- Cap. Ratio
Main School	1046	56	1102	94.9	5.1	70.8
Annex	33	196	229	14.4	85.6	47.7

If this is true, then whites make up 18.4% of this particular school population but are very unevenly distributed between the two schools (possibly benefiting further from the lower enrollment-capacity ratio in the Annex.) The enrollment-capacity



ratio in the Main school is given as 70.8%  $\frac{(1102)}{1556} = 105.4\%$ ; that is including the Annex. The correct figure to give of course is the one excluding the Annex (as is done for the Annex) which is  $\frac{(1102)}{1046} = 105.4\%$ . The Main school was in fact 5.4% over capacity compared to the 47.7% of capacity situation in the "white" Annex. By giving the two together the over-capacity situation in the two schools is obscured by being averaged out.

Further in the geographical grouping in question the whites are concentrated in only two other of the schools (in Leckie, a new school where 176 of them make up 29.2% of the school and in Patterson where 98 make up 12.6%). Indeed out of 11 schools (counting Congress Heights Annex and McGogney Annex) whites are concentrated in only three.

#### B. On the Economics of Bussing

On September 21, 1970, after 1520 children had been bussed, a further 2343\* children were in overcrowded schools and needed to have places found for them for the schools to operate merely at 100%. It might have been advantageous to provide transportation for these children to under-utilized schools. Since most of the children bussed were

\* From "Membership of Elementary Schools on Sept. 21, 1970." We would point out that 12,632 children were in these schools and were therefore to some extent affected by overcrowding. In other words, at this date 14.2% of the D.C. school children were in overcrowded schools. We further note that one month later, although 13.7% of D.C. children were still in overcrowded schools, the figure 2343 had been reduced to 1385.





from overcrowded schools, the total overcrowding in the system, absent bussing, would have involved about 3800 children, or 4% of the elementary school population. We have argued that one reason why bussing is not more popular--assuming, of course, that it is well advertised and well administered--is that the receiving schools are not perceived to be superior to the sending schools.\* Since only one bussed child in five went to a W" (majority white) school in fiscal 1970, it is not surprising that parents feel this way, if plaintiff's argument that Group II schools west of the Park are favored is correct.\*\*

The defendants argue a case against bussing on the basis of the economy of demountables.\*\*\* They claim that the annual cost of bussing 30 children is \$10,260, compared to the annual cost of a demountable unit of \$3,300, pro-rating that unit over ten years.\*\*\*\* Defendants calculation was as follows:

\* This argument is presented by parents, and appears as argument number 4 on Defendants' list of parental objections, Memorandum of November 16, p. 13.

\*\* The chance of being bussed to a Group II school was slightly higher in fiscal 1971, presumably because children not being bussed to W" schools were less eager to continue being bussed. This repeats an argument we have made above.

\*\*\* See Defendants' Memorandum, p. 15

\*\*\*\* We note that Feinberg, in his Washington Post article, op. cit., claims a 20 year life for these units. We assume defendants accept the ten year figure as correct, since this is the figure they used.



Cost of demountable, including toilets and site improvements	\$ 33,000
Bussing @ \$10,260 a year for 30 pupils	\$102,600

The advantage of demountables is claimed therefore to be \$6,960 per year.

Defendants' calculation is incorrect on several counts, and the actual per annum cost favor bussing. First of all, bussing to underutilized schools with low pupil-teacher ratios does not require adding a teacher.\* A demountable classroom, on the other hand, does require a teacher. The annual cost to the District a teacher must be at least \$10,000, and we will add that cost to the calculation. Secondly, a demountable room must be heated and cleaned and kept in repair, whereas underutilized room is already heated and cleaned, and probably suffers very little more damage from a little more use. To be conservative, we make no estimate of this expenditure.

Finally, defendants neglect to calculate that a demountable must be paid for in advance of the ten years for which it is used. Busses, on the other hand, are paid for annually. Therefore there is an interest charge on the demountables. We assume that the interest rate is 4%, that the demountables are paid for by a sinking fund arrangement from which 10% of

\* Defendants admit as much when they say, on page 15 of their Memorandum:

Admittedly, the bussed child helps to fill up an already existing building, helps adjust or equalize class size in the receiving school as well as in the sending school, and the child may get a better education because he is in a smaller class.



the principal is retired each year. Furthermore, to be conservative, we assume that each year's debt is paid at the beginning of the year, thus saving that year's interest. The total interest cost is \$5,940. Our calculation of the annual average cost of demountables is:

Initial cost	\$ 33,000
Interest	5,940
Teacher at \$10,000 per year	100,000
Maintenance, heat, etc.	- - -
	<hr/>
	\$138,940

The annual average cost of a demountable is at least \$13,894, or almost \$3,600 more than the bussing cost, per year. If we include the \$10,000 cost of moving a demountable one time, then demountables cost almost 50% more per year, on the average, than bussing. If demountables are posed as a flexible solution, this is the minimal difference between these two plans which can come from the figures given us.

We do not wish to appear to be necessarily arguing for a bussing policy over new construction, be it of demountables or more permanent buildings. We certainly are not arguing for or against bussing on educational grounds. However, we do find the financial analysis on the question of bussing vs. demountables presented by the defendants to be totally inadequate. We are led to wonder if any serious thinking on this subject preceded policy decisions, and we offer our analysis here as a friendly gesture towards more rational decision making in the future.





## CHAPTER VI

### THE ECONOMIES OF SCALE ARGUMENT

Defendants rely heavily on the concept of "economies of scale" to justify higher expenditures in the schools west of Rock Creek Park. These schools are, indeed, smaller on the average than schools east of the Park. As we have shown, they are also underutilized more than schools east of the Park, which makes them operate as even smaller schools. Even if there are true economies of scale, then, it would be improper to apply them as an explanation of increased costs for a lower enrollment to the extent that this enrollment is itself the result of a deliberate and unequal school policy.

However, Defendants have failed to show true economies of scale, they have failed to calculate the amount to which the reputed economies explain variation in expenditures among schools, and they have failed to estimate the size-expenditure relation, to see if it is in fact steep enough, given the range of school sizes in the District, to exceed the  $\pm 5$  percent of mean teacher expenditure per pupil limit for which Plaintiffs have argued.

We will rectify some of Defendants' errors, being unable to rectify them all with the data at hand. First we will demonstrate that Defendants have made no argument for economies of scale. They have omitted the most important element implied by such a concept as it applies to any production process: that the output of that process be the same as size of production unit varies. We will briefly discuss some relevant literature,



which Defendants ignored, and which recognize this basic requirement of controlling for output.

Second, we will analyze the data on which the economies of scale argument is based. We will show that there is some relationship between size and expenditure per pupil, though, not knowing whether the large schools are as good as the small ones, we cannot tell if this represents economies in production or discrimination in resource allocation. However, being most generous by assuming that the large schools would be as good as the small schools with the reduced expenditures implied by the data, we find that the effect of size cannot justify the expenditure differences observed. We offer precise estimates of the estimates of the presumed "effect" of size, reminding the Court several times that without proper output controls, there is no way to distinguish real economies from arbitrary policy.





## I. Economies of Scale in Fact and Fiction

Defendants have utilized an argument from an article by June O'Neill and Arlene Holen as published by The Washington Post.<sup>\*</sup> This article was attached to and quoted extensively on pages 18 and 19 of Defendants' Memorandum. Unfortunately, the authors of this article demonstrate little more than their incompetence and ignorance. No economies of scale can be demonstrated from the data which they discuss.

### A. The Theory of Economics of Scale

If there are two factories which produce widgets, one factory larger than the other, then we can investigate economies of scale providing the following situations occur:<sup>\*\*</sup>

- 1) The capital for the two factories was purchased at the same time (or no different technologies existed at the times of purchase).
- 2) The widgets are indistinguishable, as determined by the fact that they sell for the same price in the same market.

We will ignore the first condition, on the assumption that educational outcome is determined mostly by the relationship between teachers and child, secondarily between materials

<sup>\*</sup>June O'Neill and Arlene Holen, "The Division of D.C. School Funds," The Washington Post, October 15, 1970.

<sup>\*\*</sup>Economists like to investigate widgets because they do not exist.



and child (as utilized by the teacher) and only a little by the peculiarities of the building which cannot be renovated away.\* Therefore, we need only to know that the outcomes of schooling are not related to the size of school, to be able to estimate the economies of scale in producing that output. O'Neill and Holen state:

...the time-honored principle of economies of scale....describes the general tendency of costs per unit of output -- in this case, one child's education -- to fall as the scale of operation -- in this case, the size of the school -- increases.

Is "one child's education" to be measured by the fact that a place in a school is provided for him? Clearly not. We have to have some idea whether his education is equal, not his time in school. That, after all, is what this case is about. We do not have sufficient data to judge, by any definition, whether the education provided in one school is equivalent to that provided in another. However, we do know the gross result of the school's production and the family background and whatever other influences have been at play in terms of standardized achievement tests. We have calculated, from achievement test data supplied by Defendant referring to fiscal 1970 (we presume the end of that year), the

\*We have commented above, Chapter IV, that in any event classrooms are larger in the schools west of the Park. We would like to know, in addition, how much play area is associated with each school, and what is its composition (asphalt, grass, etc.).



average percentile rank of pupils in different areas of the District of Columbia. The percentile rank is based on norms for large cities -- more lenient in ranking than national norms. We give this average rank for the third and sixth grades for the Reading test only (Arithmetic test results are also available) in Table VI-1,

We can see that outcomes are definitely not equal. Schools west of the Park have an average rank twice that of the rest of the city. Within the west of the Park group, our Group II schools have a clear advantage in test scores. Indeed, the average pupil in one of these scores has done better on this test than three-fourths of the children in large cities. The average child in an Anacostia school on the other hand, has been bettered by almost two-thirds of the children in large cities. We are not, of course, suggesting that these scores are solely the result of superior schooling. However, the burden is squarely on the Defendants to demonstrate that none of the difference is due to schooling. We will present current knowledge on the size-output relationship in the very next section. The evidence is not strong, but it does hint at a negative effect of school size on achievement. The Defendants cannot, therefore, rely on general evidence that school resources are not related to achievement.\*

\*Defendants have already referred to James S. Coleman, et al., Equality of Educational Opportunity, (U.S. Office of Education, 1966), and Children and Their Primary Schools, Report of the Central Advisory Council on Education (London, Her Majesty's Stationery Office, 1967). However these reports make no extensive analysis of the relationship between size of school and test score outcome.





*Digitized by me*

TABLE VI-1

Mean Percentile Reading Test Scores\*

<u>School Area (number of schools)</u>	<u>Grade 3</u>	<u>Grade 6</u>
Anacostia (34) <sup>a</sup>	35.78	37.38
Title I 20) <sup>b, c, d</sup>	31.54	34.83
Rest of East of Park (56) <sup>e, f, g, h</sup>	39.52	39.21
West of Park (13)	69.92	72.05
West of Park Group I (5)	54.72	57.17
West of Park Group II (8)	74.27	76.11

- a) No scores given for Nichols Ave., Grade 6.
- b) No scores given for Langston and Perry, Grade 3.
- c) No scores given for Poor, Edmonds & Langston, Grade 6.
- d) Bundy is omitted because it is a special school.
- e) Both Lenox and Lenox Annex are omitted since Lenox Annex is a special school and since the data provided for the two schools could not be separated. Blow-Pierce, Grant and Military Road are also omitted because they are special schools.
- f) No scores given for Grade 6 of Amidon, Blair-Ludlow-Taylor Syphax and Tubman.
- g) No scores given for Grade 3 of Blair-Ludlow-Taylor, Bowen, Syphax and Tubman.
- h) No enrollment data given for Amidon or Hayes.

\*The reading test scores are given as the mean ranking according to national large city norms. In each area, the mean per school was weighted by the membership of that school to obtain a true pupil mean for that area. Some error is introduced by using school weights, whereas the number of children in that grade per school have been used. We do not have this data.



In addition, there are other outcomes of schooling which are important besides test scores. Attitudes toward the world around them, towards other people, towards themselves, are being recognized as being influenced by school. Are the schools influencing these attitudes randomly? Are these outcomes related to size of school, to area of the District? We do not know. Defendants must be assuming that all District schools are affecting these outcomes equally if they are to assume, as they do, that one child's place in a classroom is a valid measure of educational outcome. We would like to see an explicit statement by Defendants on this point.

#### B. The Relationship Between Size of School and Achievement

Herbert Kiesling has done the most extensive analysis of the relationship between size of school and achievement. Analyzing the Project Talent Data for high school students using test scores as outcomes, he finds:

In general the relationship of high school size to high school performance, net of the effects of pupil intelligence, pupil socio-economic background, and high school expenditure-per-pupil, is negative at meaningful levels of statistical significance.\*

After a more refined analysis, accounting for rural-urbaness

\*Herbert J. Kiesling, High School Size and Cost Factors, U.S. Office of Education, March, 1968, P. 30.





and accounting more carefully for socio-economic status, this relationship appears weaker. Kiesling argues, however, that there is still reason to hypothesize the existence of a negative size-outcome relationship.

... the negative size findings which obtain when the two control variables are entered into the regression equation might be more believable than the more positive findings when those two variables are omitted.\*

Elchanan Cohn tested for the effect of size of school, also at the high school level, using as his output measure the difference between twelfth grade and tenth grade scores on the Iowa Tests of Educational Development. Including both class size and Average Daily Attendance, he finds a negative relationship for one, positive for the other, but with the signs reversed depending on whether the difference in scores or the logarithms of the difference of scores is used as the dependent variable.\*\* It is equally likely that this is the difference in the logarithms of the scores -- the author is not clear on this point. This indicates that these two variables are related, and should not have been entered into the same equation. The variables were not significant at any time.

\*ibid, P.130

\*\*Elchanan Cohn, Economies of Scale In High School Operations, Journal of Human Resources, III, 1968.



### C. Findings on Economies of Scale

The Plowden REport briefly investigated the relationship between school size and cost for primary schools, but did not control for pupil outcome of any kind.\*

"We examined the relationship between the major running costs of a sample of 81 primary schools and their size and age. Building maintenance costs were shown to be related to the age of the school, but not to its size. Cleaning and caretaking costs per pupil showed some tendency to rise with increases in the size of school, and fuel and lighting some tendency to fall, but none of these costs was related to the age of the building."\*\*

The authors question the genuineness of the observed "economy of staffing in very large schools," pointing out that it "will disappear, if as we recommend, schools are staffed on the basis of a pupil-teacher ratio as well as on size of class."\*\*\*

Most studies purporting to be concerned with economies of scale in schooling consider Districts as units.\*\*\*\*

\*Children and Their Primary Schools, op.cit.,pp.169-170,Volume I.

\*\*ibid.,p.169.

\*\*\*ibid.,p.170.

\*\*\*\*See for example, Werner Z. Hirsch,"Expenditure Implications of Metropolitan Growth and Consolidation", Review of Economics and Statistics, August,1959,pp.232-241,or Jerry Miner,Social and Economic Factors in Spending for Public Education,Syracuse University Press, 1963.



Besides the Cohn study previously cited, we have found only one other study which considers schools as units, by John Riew.\* Both Riew and Cohn estimate per-pupil expenditure with an equation of the form:

$$Y = a + b_1 S + b_2 S^2 + b_3 X_1 + \dots + b_n X_n + e$$

where Y is total current cost per pupil in Average Daily Attendance, S is a measure of size (ADA), and the X variables are controls for such things as teacher salary and other "quality" factors. It is doubtful whether school quality is well controlled but at least these authors were aware that it should be.

The two equations differ markedly:

Riew:

$$Y = 10.31 - .402S + .00012S^2 + \dots$$

Cohn:

$$Y = 263.46 - .17758S + .0000537S^2 \dots$$

To see what these equations mean, we calculate the scale effect at 700 pupils, the average for the District of Columbia in fiscal 1970.

Riew:    -\$.234  
Cohn:    -\$.103

At the average size, one estimates a 23¢ savings in per-pupil cost with the addition of one more pupil, the other estimates a

\*John Riew, "Economies of Scale in High School Operation," Review of Economics and Statistics August, 1966, pp. 280-287. Cohn, it should be mentioned, does use district data, but he deliberately chooses districts with but one high school.





10¢ saving. We cannot try to reconcile these figures -- the data samples and controls were quite different. They both refer to total current costs per pupil, and therefore should be higher for our purposes. However our own estimate for District elementary schools is also approximately 10¢, without controlling for pupil outcome.\*

\*We chose that Cohn equation which did not include a direct outcome control, as his test score difference was not significant, and neither Riew nor ourselves have such a control.



There is one study relating size of school and achievement at the elementary level. Schools in two districts were separated into three size groups of little relevance to the District of Columbia schools:\*

Group I - 300 or more  
Group II - More than 100, less than 300  
Group III - Less than 100

The data come from a coal mining and a rural area in Kentucky.

"Of the 30 District A schools in Group III, twelve were one-teacher schools, whereas 47 of the 52 in Group III in District B were one-room units." \*\*

Thus the size of the school and the presence of non-graded classrooms ( or at least combined grades in one room) are confused. In addition, there are no controls on either the backgrounds of the students or on the qualifications of the teachers. Thus though significant advantages are found for the larger schools, the authors themselves note that

"The evidence does not reject the possibility that factors other than size influence the differences in levels of achievement of students."\*\*\*

Indeed, we mention this study only to be complete. Unless one is dealing with rural one-room schools, and unless he does not care

to determine why particular schools produce lower scores than others, this study provides no information at all on the relationship between size of school and achievement.

\*Paul Street, James H. Powell, and John W. Hamblen, "Achievement of Students and Size of School," The Journal of Educational Research

\*\*ibid., p.262.

\*\*\*ibid, P.266.





In conclusion, economies of scale are claimed to exist in schooling. There is no good estimate of those economies, because there is no adequate control for outcome. The two estimates we have found diverge by 100%. However, one of these is approximately the same as we shall find below. We will show at that time that such an estimate of the effect of scale on per pupil teacher expenditure cannot explain the variation found within District schools. In particular, as we will demonstrate, it can explain no more than half of the difference between expenditures on schools west of the Park and the rest of the city in fiscal 1970.

Thus the findings on the relationship between size and outcome, controlling for expenditure, are not at all strong. However, a negative relationship is quite possible at the high school level and have apparently never been seriously tested at the elementary school level. Let us give Defendants the benefit of the doubt that size does not of itself create a negative impact



on achievement. Nonetheless, achievement obviously does vary with size of school as implied by Table VI-I. We would like to ask them if large schools are considerably less expensive to operate than small schools with equivalent school achievement among students.

It is amazing to us that O'Neill and Holen did not investigate the literature before claiming economies of scale for District schools. It is certainly more amazing that they neglect to ask whether the quality of schooling is reasonably the same in all schools. But it is most disconcerting to see that they made no attempt at all to explain costs by size.

Indeed, if we refer to their bar chart, we see that they are prepared to accept whatever decrease in expenditure accompanies the increase in size, without ever asking whether there might be something else occurring in these schools. It is a kind of statistical nihilism which assumes that whatever is must be. We will see that a good deal of what is reflects school department discretion, and this discretion favors schools west of Rock Creek Park.



## II. ECONOMIES OF SCALE IN D. C. SCHOOLS, FISCAL 1970

The arguments above have established that the existence of true economies of scale, i.e., lower costs with equal output for larger producing units, have not been demonstrated by defendants. In addition, the literature reveals some economies for total expenditures among high schools, but not strong enough economies to explain the disparities in expenditure in Washington, D. C.. The defendants have not estimated any actual size-output-expenditure relationship. The literature also indicates the possibility of a negative relation between size of school and achievement. Although we do not claim that test scores are entirely caused by school, we do note that achievement test scores are significantly higher in those schools in which more money is being spent. In Table VI-2 we show correlations between test scores and per-pupil expenditure in fiscal 1970. We give these correlations with and without the special schools to demonstrate how misleading their inclusion can be. Since special schools are defined essentially by their pupil low scores, and provided with extra funds on this account, a negative correlation is part of the school expenditure design. A positive correlation among other schools could be due to a causal relationship between higher expenditures and higher scores. It could also be due to money following higher social class children who tend to have higher scores. Neither interpretation seems favorable to defendants' position, since we have shown that the high test scores are in schools in Group II schools west of the park.





TABLE VI-2  
CORRELATION COEFFICIENTS BETWEEN  
EXPENDITURE PER PUPIL AND TEST SCORES  
Fiscal 1970

Excluding Special Schools  
N=123

	<u>Third Grade</u>		<u>Sixth Grade</u>	
	<u>25th Percentile</u>	<u>Mean</u>	<u>Percentile</u>	<u>Mean</u>
Teacher Expenditure per child				
Reading:	.148	.123	.112	.090
Arithmetic:	.117	.088	.091	.135
Regular Expenditure per child				
Reading:	.076	.046	.036	.025
Arithmetic:	.049	.025	.021	.075

Including Special Schools  
N=128

Teacher Expenditure per pupil				
Reading:	-.171	-.151	-.049	-.082
Arithmetic:	-.171	-.138	+.022	-.008
Regular Expenditure per pupil				
Reading:	-.203	-.193	-.089	-.116
Arithmetic:	-.202	-.174	-.019	-.038



If less per pupil is expended in larger schools it still may be the case that these schools are inferior. To ascertain this, we would need a numerical estimate of the effect of size on expenditures, holding quality constant. However we will demonstrate that even by the most generous arguments available from the data, schools west of Rock Creek Park are favored in allocating the D. C. budget, over and above that amount of differential expenditure which can be ascribed to "size". By one set of standards the eight schools west of the park which we have called "Group II" are favored by \$43 per child, or well over the 5% difference from the mean being considered.

We will proceed in the following order. First, we will demonstrate that the O'Neill-Holen article from the Washington Post is as statistically specious as it was theoretically irresponsible. Second, we will present a valid statistical method for explaining expenditures. We will show in several ways that any economies of scale effect is small, and becomes smaller as other expenditure explanations are considered. We will "explain" several expenditure items by size, presence of special classes, and teacher characteristics and capacity utilization (i.e., with and without accepting this utilization as a fait accompli with legitimacy in explaining expenditure variation), and present estimates of the discrimination in favor of schools west of the park whether or not our argument that capacity utilization should be controlled for is accepted.

#### A. The O'Neill-Holen article

June O'Neill and Arlene Holen are very explicit: "Variations (in regular D. C. expenditures per pupil) arising from





factors other than size appear to cancel each other out." The reason for this phenomenon of declining costs ... is the greater spreading out of high fixed costs over more pupils in the larger schools." "There is, however, no evidence of systematic expenditure variation or discrimination east or west of the park..." That is, they claim 1) to have explained a large proportion of the variation in expenditures, 2) to have determined that spreading fixed costs is the culprit, and 3) to have established that the residual variation is random with respect to the park. All three conclusions are incorrect.

For the 128 schools for which we have complete data for fiscal 1970, Average Daily Membership (ADM) alone "explains" 25.7 per cent of the variation in D. C. teacher expenditure per pupil. Excluding the five special schools, ADM alone "explains" 28.0 per cent of the D. C. teacher expenditure per pupil. We are enclosing the word "explains" in quotation marks because, as will be seen below, some of this explanatory power is spurious -- it appears here because size is to some extent correlated with other factors which, when they are accounted for, diminish (but do not extinguish) the explanatory power of the size variable. Size might, however, "explain" a bit more of the variation in expenditures if we account for a nonlinear relationship between size and expenditure. This is logical, as the larger the school, the less impact we would expect -- from O'Neill and Holen's argument about spreading fixed costs -- from further increases in size. If expenditure is related to size by the formula

$$\text{Exp} = \text{Constant} - b_1(\text{ADM}) + b_2(\text{ADM})^2$$

then the ability of size to "explain" cost variation is indeed



increased. Table VI-3 presents the per cent of expenditure explained, for the expenditure categories, by ADM alone and ADM with (ADM)<sup>2</sup> together from the above formulation. (We note here, as above, that this formulation has appeared previously in the literature. See, for example, Elchanan Cohn, "Economics of Scale In Iowa High School Operations", op. cit.) We present this information for the fiscal 1970 data set which excludes those schools we have identified as "special".

From Table VI-3 the following points are clear. 1) Size of school does not "explain" most of the variation in any expenditure category. At most, size "explains" one-third of the variation. Inclusion of the special schools reduces the apparent effect of size, because the presence of special students overwhelms any size considerations. 2) Very little reduction of explanatory power appears when teacher expenditures, not D. C. regular expenditures, are used. The assumption that high fixed costs other than teacher costs lies behind this apparent size-expenditure relationship does not seem tenable. The phenomenon of spreading non-teacher fixed costs as an explanation of the size relationship appears seriously deficient.

Another simple test of the scale phenomenon is to explain total school expenditures not per pupil/<sup>but</sup> by number of students. If there is a linear relationship, then there are no economies of scale. If there is a nonlinear relationship (of the same form as above), then there are such economies. That is, in the absence of economies of scale, each pupil would add an average amount to the cost of the school. If there are economies of scale, then as the school gets larger, less should be added to the expenditure, as indicated by a negative coefficient for the quadratic term (ADM)<sup>2</sup>.



TABLE VI-3

Percent of expenditure Variation "Explained" by Size (ADM)  
of School Alone

	128 including ADM	School special ADM+ (ADM) <sup>2</sup>	ADM	123 Schools excluding special ADM+ (ADM) <sup>2</sup>
D. C. Regular Expenditure *a)	27.6	32.0	34.0	34.7
D. C. Regular and Impact *a)	26.8	32.8	31.8	33.7
Teacher Expenditure *b)	25.7	31.8	23.0	23.7

a) Morgan School included with incorrect ADM, and Grant not excluded as special.

b) Morgan School excluded, Grant excluded as special.

\*Expressed on a per pupil basis





We can measure the divergence from linearity by asking how much more variation is explained by the scale factor than was explained by the size factor alone. For the three types of expenditure, the increase in the percentage of variation of costs per school explained by a scale factor, over and above having an average cost per child and knowing the size of the school, is as follows:

(From regressions in 127 schools, smaller single results are essentially the same. We note here that the percent of variation explained by size alone, and a fortiori by size and scale, is considerably greater than when per pupil expenditures are at issue. This is as it should be: it is because we expect size to dominate the school expenditure pattern that both sides in this case concentrate on per pupil expenditures).

Regular D. C. expenditures	1.77%
Regular + Impact	.40%
Teacher	1.14%

O'Neill and Hölen do not see that more variation lies within their size categories than between them, because they have simply not looked at the data. (It appears that they did not look at the September show-cause order, either, or they would have analyzed per pupil teacher expenditure, not the D. C. regular expenditure). As a gross example, they show us two schools west of the park in the 500-749 ADM range, with an average expenditure of \$611. The fiscal 1970 expenditures on these two schools were:\*

Lafayette (735)	\$515.82
Murch (634)	\$720.33

Thus these two schools appear to follow a regular pattern in the

\* From defendants' submission of August 21, 1970.



in the bar chart which O'Neill and Holen show us, but in fact one school has expenditures closer to their previous category, and one close to their succeeding category. Though there is no doubt some relationship between school size and per pupil expenditure, this use of grouped data obscures variation which, we shall see, is not random, and is not neutral with respect to the issues in this case.

We will not, in this section, demonstrate this last statement, which is the third claim of O'Neill and Holen from our summary above. That they obscure nonrandom and relevant variation is amply demonstrated below. Here, we will make one final point. If one were to choose one factor to explain D. C. regular expenditures, would size be the one? That is, looking at the data, does size alone "explain" more variation in cost than any other factor alone? We realize that this is an absurd question, but it is essentially the one O'Neill and Holen asked, since they did not analyze any factors other than size. We looked and found four candidates who have the virtue of being equally plausible, and having more explanatory power than size alone. They are:\*

Capacity utilization	
(ADM/Capacity)	40.2%
Teacher/Pupil ratio	55.8%
Special Schools	41.3%
Percent special students	32.0%

The four items above, plus size, with the simplistic approach taken in the O'Neill-Holen paper, would seem to "explain" over 180% of the variation in D. C. regular expenditures. Clearly a more sophisticated procedure which apportions variation among

\*Based on 128 schools including special. Figures without special schools are somewhat lower.





explanatory variables is necessary. To this we turn immediately.

## B. Analyzing School Expenditures

We will here estimate a decision function for expenditures per pupil in Washington, D. C. schools in fiscal 1970. By "decision function" we do not mean to imply that the superintendent of District schools can autonomously determine how to spend school funds; i. e., we do not exclude the possibility of some market process or other conflict of which we observe only the resolution. However it is of basic importance to differentiate this estimation from a "production function" in which an output of schools is being determined by inputs into the school production process. Rather, we are estimating the interrelationships among inputs affecting costs, as these relationships have been worked out by whatever process is involved, and whatever differences in output among schools may result.\*

The estimation procedure utilized is ordinary least squares regression.\*\* The data are all from fiscal 1970, from submissions of the D. C. Schools to the United States District Court. We have been able to put together usable data files for 128 schools. Of these, five are "special."\*\*\*

\* For more information on production functions see Samuel Bowles, Educational Production Functions, Report to the U. S. Office of Education, February, 1969. For a technical discussion of production function estimation, see Stephan Michelson, The Existential Reality of Educational Production Functions, U. S. Office of Education, August, 1970.

\*\* For an explanation see, for example, James S. Coleman, et al., Equality of Educational Opportunity, U. S. Office of Education, 1966

\*\*\* See our discussion of the data in Chapter IV, Part I, above.



We tested equations in two forms: in one, these special schools were included, but separated from the other schools by a binary variable. (This variable has the value 1 for these five schools, and 0 for all other schools). In this type of equation, the value of the Special Schools coefficient indicates how much more was spent, per pupil, in a Special School, in fiscal 1970, accounting for its size, and whatever else is in the equation. The relationship between cost and size and the other variables for these schools has influenced the other coefficients, however. In the other form of the equation, we exclude the Special schools from the estimation. (Since non-special schools have special students, we still consider a variable for "Percent of Special Students.") We give up an estimate of the net effect of being a special school, but we gain validity in our other coefficients, since being a Special School obviously dominates any other characteristic in determining expenditures. It is these latter estimates which we show, though we will mention results from the former estimates.

It is important to realize how different these special schools are from the others. We have nothing but praise

for the obvious efforts put into these schools in fiscal 1970. \* We have no enthusiasm, however, for defendants' attempt to include these schools in East of the Park averages.

\*We are disappointed that this effort apparently has not continued into Fiscal 1971. Data for Pierce above is not available.



Here are the average D. C. Teacher expenditures per pupil for these schools

Bundy	\$1,472.02
Military Road	1,416.65
Lenox Annex	657.57
Grant	1,300.03

Our regression results here are by and large insensitive to the inclusion or exclusion of these schools, since we differentiate them by means of a Special Schools variable. The other variables in the analysis are as follows:

TEAEXP	Teacher expenditure per pupil
ADM	Average Daily Membership
SPEC	Binary variable for special schools
PERSP	Percent special students per school
PERMM	Percent of teachers per school who are permanent with a Masters, Masters plus thirty credit hours, or Doctorate degree
PROM	Percent of teachers per school who are probationary with a Masters, Masters plus thirty credit hours, or Doctorate degree.
CAPAC	Capacity of the school, regular rooms with 30 children
CAPUT	Capacity utilization: ADM divided by school capacity
MODEL	Binary variable denoting schools in Model Schools division
RC1	Schools west of Rock Creek Park which are majority black, plus the Key School
RC2	Schools west of Rock Creek Park which are majority white, except the Key School.

Other variables were defined in preliminary trials, but are not





utilized here because they were not significantly related to any expenditure measure.

The question of which variables to enter into an expenditures decision function raises the problem of legitimacy. This is best explained by example. It will be true that costs are related to capacity utilization. This relationship is strong and negative: the heavier the utilization, the lower the per pupil costs. But capacity utilization is itself directly under the control of the D. C. Superintendent of Schools. In asking whether the Superintendent favors schools west of the park, it is not sensible to control out of the equation the means by which he does this. It is like asking a football coach to ignore the size of his players in choosing his starting team. While we recognize the concept of a smaller player being better given his size, football games are won or lost as they are played. A coach may recruit heavy players and win. A Superintendent may underutilize certain buildings and thereby favor them in per pupil cost. The team does win, the schools are favored. Nothing is gained by controlling away these facts.

Thus when investigating the net effect of being in Group I or Group II schools, the proper equation to consider accounts only for size, percent special, and the compensatory efforts in the Model Schools. Whatever variation in cost is produced by varying capacity utilization by area is a decision which, as we have documented in Chapter V, need not have been made. We should also know the experience and degree status of teachers, though we should not control for these items in determining the effect of being in a Group I or Group II school. In the extreme, if we accounted for



all the mechanisms by which these schools are favored, there would be no residual variation accounted for by the binary variables RC1 and RC2. This would not indicate, of course, that these areas are not favored. Rather, this would estimate the ways in which these schools are favored.

It should be clear, therefore, that in investigating the effects of size, all possible discretionary discrimination should be accounted for. This is the complement of the argument immediately above, that in investigating the effect of being in a school west of Rock Creek Park, no other discrimination should be separately accounted for. The proper equation from which to estimate the effect of size would be that in which teacher experience -- on which we do not have fiscal 1970 data -- is included with teacher degrees and capacity utilization.\* One should refer to Table VI-3 for information on the differential financial resources going to Group II schools, to Table VI-4 if he believes that capacity utilization is not within the discretion of the Superintendent of Schools, and to Table VI-5 for our best estimates of the effect of size on per pupil teacher expenditures. One would also utilize this table if he believed that teacher degree status and capacity utilization are both out of the control of the Superintendent.

\* Strictly speaking, the proper regression equation estimating favoritism towards schools west of Rock Creek Park should constrain the coefficients of the size variables to their values from the fully specified equation. By not doing so, we have estimated a smaller impact for those areas than they should actually show. Given the time period within which this Report was produced, we are unable to make these estimations.



C. A Note On Teacher Experience

The question of whether teacher characteristics should be considered as reasonable explanations is before this court. We have been involved with this issue for some time, and have consistently felt that school boards have not justified excluding differential pay for experienced teachers from measures of inter-school comparability. This is true not because there is independent evidence that experience is productive -- though, for the initial years, this does seem to be the case -- but because school managers must value this experience to pay for it.\* The same argument, after all, could apply to degree status of teachers: we have no certain evidence that teachers with more letters after their names are better than teachers with fewer letters; but in this case school boards have agreed that they are paying for value. The D. C. Superintendent wants to correct for experience only. This raises only a slight problem here, because we have never received data for fiscal 1970 with years of experience per school. (The fiscal 1971 data which does contain this information, on the other hand, does not give us degree status of the teachers). Thus we will investigate teacher degrees only to demonstrate that it is immaterial to our case. It is improper to control for it. The schools may contend that we should control for (eliminate the influence of) teacher experience, and we will be happy

\*There is independent evidence in favor of the hypothesis that experience contributes to teacher productivity. Defendants themselves refer to Henry M. Levin, "A Cost-Effectiveness Analysis of Teacher Selection", Journal of Human Resources, Winter, 1970. For a more extensive analysis, see Henry M. Levin, Recruiting Teachers for Large City Schools, Charles E. Merrill, 1970, in

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to make that estimate if they will provide us the data.

D. Regression Results: An Overview

We will separate out three areas of the city with binary variables: the Model Schools area, and the two sets of schools west of Rock Creek Park. Our hypothesis is that there will be a positive and significant coefficient for the variables RC2 and RC1. Such coefficients will indicate that, after controlling for legitimate expenditure variation, schools which we defined on racial and geographic criteria alone are favored in expenditures. We will find that this is true when only ADM and special students are accounted for. We will find that this continues to be true when teacher degree status and capacity utilization are accounted for. In addition, we will find and demonstrate that the apparent effect of scale diminishes as other variables in the equation are entered. That is, some of the cost differential which appears to be due to size is in fact better related to other variables.

\*(continued from page )

which a non-linear but positive relationship between teacher experience and pupil achievement is posited. The most elaborate statistical work on this question was done jointly by Levin and the author of the present document. See Henry M. Levin, "A New Model of School Effectiveness", and Stephan Michelson, "The Association of Teachers Resourceness With Children's Characteristics", both in Do Teachers Make A Difference?, U. S. Office of Education, OE-58042, 1970. In slightly different simultaneous equations estimations, both authors find a considerable relationship between teacher experience and pupil achievement. As explained in Michelson, "The Existential Reality of Educational Production Functions", op.cit., the nature of the Levin-Michelson sample induces an upward bias in this relationship. However, we do not know if this bias is severe enough to reduce this effect to zero. Not even the most ardent anti-octagenarian has claimed that the first few years of teaching experience is valueless.



In Tables VI-3 through VI-5 we present the coefficients, T-ratios, and  $R^2$  for several equations.\*

The information in these tables is organized to demonstrate the effect of each variable, controlling for the others, on the last line of each sub-table. In preceding lines, variables have been entered one at a time, always starting with the measure of size of school which is indicated. It is intended that one should be able to see the relationship between size and per pupil expenditures as different variables are accounted for. In fact, because of the quadratic form of the size relationship, this is somewhat difficult. Therefore we have taken the average size school (700 pupils), and calculated the scale effect at that mean. We note that the scale effect diminishes as schools grow larger. One can easily calculate the effect at any size school from the formula:\*\*

$$\text{Size Effect} = b_1 + 2b_2(\text{Size})$$

\*\* This is the first derivative of the estimated function with respect to size.

\* A T-statistic is a measure of how much larger the coefficient is than its standard error. This indicates its statistical significance. A value of 1.96 or better usually indicates significance at the 5% probability level (chances being only 1 in 20 that this result would occur when no relationship, in fact, existed). For variables about which there has been a prior hypothesis as to sign, a T statistic of 1.64 is required for 5% probability, and 1.28 for 10% probability, given the sample sizes utilized here.





where  $b_1$  is the coefficient of ADM, and  $b_2$  is the coefficient of (ADM)<sup>2</sup>. The sign of  $b_1$  is always negative, and of  $b_2$  is always positive. The effect of scale at mean school values is given in the first column of each table for which it is relevant.

Looking first at the first column, the effect of scale, we see, as announced above, that it diminishes as other variables are entered into the equation. We will return to this subsidiary issue later

It should be clear that the defendants' case for economies of scale, while both plausible and possible, has been highly exaggerated. We will repeat once more that no such case can be made without claiming that equal quality of education is produced at the lower costs.

The more important information found in these tables is that the Group II schools west of Rock Creek Park are definitely favored in expenditures. The Model Schools, we note, are similarly favored. About one-half of the variation in expenditures among District schools can be explained by the measures used here. Anacostia schools are not different in these expenditure relationships from the majority of schools in the city -- and by that virtue, are mistreated with respect to schools west of the park. We emphasize that the sole criterion for separating schools west of Rock Creek Park into two groups was Percent Black. In addition, Key was added to the "black" group both because the defendants had picked it out, and because current data does not distinguish between Hardy and Key. Thus this strictly a priori grouping turns out to have statistical validity in





these tables.

This is the general picture: Size does explain a part of the expenditures, as do special students. These we take for argument's sake to be "legitimate" parts of the decision functions here estimated. Whether one controls for less legitimate factors, such as capacity utilization and teacher degree status, Rock Creek Group II schools are favored. The rest of this chapter explores these tables in detail.

#### D. Explaining D. C. School Expenditures, Fiscal 1970

Our basic regression results are contained in Table VI-4 and Table VI-6. These two tables are arranged in the same manner, to be explained immediately below. Table VI-4 asks the correct question: accounting for size and percentage of special students, and not considering special schools, is our hypothesis (that schools west of the park are favored) correct? The answer is "yes". Group II schools average \$34 per student more than other areas of the city, and Group I schools a surprising \$56 more.\*

Model Schools also are favored, but since this is a deliberate compensatory program, all is well. We find that schools west of Rock Creek Park are favored equally with the compensatory Model Schools, compared with the rest of the city.

In Table VI-6 we have accounted for utilization of capacity and teacher degree status. Schools in Group I have no additional advantage over the rest of the city when we account for their teacher's degrees and their capacity utilization. Model Schools.

\* These figures are significantly different from 0, but not from each other. Both figures are outside the 5% range from the mean.



D. C. EXPENDITURES PER PUPIL, FISCAL 1970  
Based On 123 Schools Not Special

Effect of Size	Regression Coefficients				Constant
	ADM	(ADM) <sup>2</sup>	PERSP	MODEL	RC1
-.153	-.153				586.79
-.157	-.241	.00006			613.29
-.135	-.163	.00002	17.44		565.05
-.130	-.172	.00003	17.95	33.96	562.91
-.127	-.164	.00003	17.53	35.41	557.11
-.100	-.110	.00000	17.99	37.88	55.96
				33.62	532.20

## T Statistics

ADM	(ADM) <sup>2</sup>	PERSP	MODEL	RC2	RC1	R <sup>2</sup>
6.868						.281
2.825	1.067					.287
1.992	0.472	4.238				.381
2.112	0.618	4.368	14.725			.392
1.985	0.553	4.227	1.536	0.834		.395
1.197	0.0219	4.338	1.643	11.077	1.326	.405



TABLE VII-5

D. C. EXPENDITURES PER PUPIL, FISCAL 1970  
Based On 121 Schools Not Special

Effect of  
Size

Effect of Size	Regression Coefficients				
	ADM	(ADM) <sup>2</sup>	PERSP	MODEL	RC1
-158	-158				Constant
-168	-252	.00006			591.99
-131	-173	.00003	16.84		620.54
-100	-114	.00001	10.52		591.96
-094	-122	.00002	11.06	28.90	711.90
-094	-108	.00001	98.40	31.54	708.24
			-1.96	48.79	704.89

T Statistics					R <sup>2</sup>
ADM	(ADM) <sup>2</sup>	PERSP	MODEL	RC2	
7.04					.294
2.95	1.14				.302
2.10	.54	4.07			.389
1.46	.21	2.56	4.39		.476
1.57	.34	2.69	4.36	1.35	.484
1.39	.25	2.39	4.53	1.48	.495
				1.61	





D. C. EXPENDITURES PER PUPIL, FISCAL 1970  
Based On ~~1964~~ Schools Not Special

Effect of  
Size

Note:  $(ADM)^2$  added to this equation would raise the final  $R^2$  to .518. However, this variable would be insignificant ( $T = \sqrt{.2889}$ ).



are about at the limit of the 5 percent range, and Group II schools are favored by \$43. This is due, we suppose, to teacher experience in these schools. (In otherwise the same equation, substituting pupil-teacher ratio for capacity utilization, Group II was favored by \$30, Model Schools by \$24, over the rest of the city. In both sets of equations the apparent effect of size is greatly reduced when other factors are accounted for.)

The data in these tables are arranged as follows. Each table is divided into two parts. In the top part the coefficients present actual dollar-per-pupil estimates of the effect of the variable indicated by the column head. Thus, for example, the first line of Table VI-4 accounts for size (Average Daily Membership) only. The coefficient  $-.153$  says that for every pupil added, the cost per pupil declines by 15.3¢. This can be quite a lot of money. Consider a school with 500 pupils which adds 100 more. Then the 15.3¢ saving per pupil added is \$15.30 per pupil; and times the 500 pupils initially there, this comes to \$7,650 savings for the school. This we can take to be the naive estimate of the economies of scale offered by the defendants.

In the second line of Table VI-4 we introduce the quadratic term. Because it is difficult to interpret the combined effect of two terms, we have calculated, as promised, the effect of scale at 700 ADM. It is about the same as was our initial estimate. At each row we add one more variable. The last row in each Table is the estimate of the full equation. The PERSP column indicates the additional dollar spent as the percentage of special students increases by 1 percentage point. The variables for Model Schools and





west of the park indicate the dollar advantage, holding ADM and percent special constant, of just being in one of these schools.

The bottom half of each table gives T statistics and  $R^2$ . The T statistic, as has been explained, is an indication of the chance of finding this coefficient if it were in fact, on average, zero. A T statistic generally should be above 1.96 to be acceptable at the 5% level, but with our strong hypotheses this need not be the case. All coefficients except those for  $(ADM)^2$  should be considered significant.  $(ADM)^2$  is included because, when it first enters, it might be considered significant, but this effect is spurious, as the addition of subsequent significant variables demonstrates.

The variable for scale diminishes by approximately one-third of its initial value. There remains, nonetheless, a scale factor of 10¢. It would require a variation in scale of 250 pupils for scale to account for a \$25 per pupil difference between schools.

A variation of 500 pupils would account for the difference between schools at either extreme of the 5% range. The smallest school in fiscal 1971 is Jackson, with 99 pupils; the largest is Hendley (and annex), at 1,845. The difference between these two schools is 1746 pupils. Calculating a (generous) size factor of 10¢ per child would account for \$174.60 per student difference. The data are not available for Jackson separately for fiscal 1971, but comparing the Hyde-Fillmore-Jackson expenditure with Hendley, a difference of \$520, we see that the difference in size can account for no more than one-third the expenditure difference. We do not deny that this is a considerable effect of size. It is a more considerable effect of discretionary behavior by the Superintendent.





We will make one last observation about these regressions. The size variables "explained" 28% of the variation in expenditures per pupil themselves. The complete correct equation from Table VI - 4 explains 40% of the variation. How much of that can be uniquely attributed to size? An answer is found by estimating the amount of variation explained by the other variables in the equation, without the size variables.\* These variables can account for almost 30% of the variation themselves, leaving 10,8%"uniquely" attributable to size. Thus although we have said nothing about economies of scale, size of school may be said to account for one-tenth of the variation in per pupil teacher expenditures among District schools in Fiscal 1970. Hardly the magnificent explainer claimed by June O'Neill, Arlene Holen and defendants!

\* See also, for example, James S. Coleman, Equality of Educational Opportunity, op. cit. See also analysis by R.G. Newton and D.J. Spurrell, "A Development of Multiple Regression for the Analysis of Routine Data," Applied Statistics, Volume 16, No. 1, 1967, pp. 51-64.

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CHAPTER VII all

EXPLAINING DIFFERENCES IN TEACHING  
EXPENDITURE PER PUPIL

In this chapter we will demonstrate that differences in both pupil-teacher ratios and average teacher costs contribute to the overall favoritism shown schools west of Rock Creek Park. We will determine what percentage of the difference between schools west of the Park and the rest of the city is due to each of these factors. We will also discuss Defendants' argument that

Teacher-pupil ratios do not vary in relation to the economic level of the school. Teacher-pupil ratios do vary in relation to the size of the school enrollment because of difference in enrollments per grade in larger and smaller schools.\*

We find that the teacher-pupil ratio is not stable over areas of the District. As in Chapter VI, we do not know if this is a result of technology or discretion. We will find that, after correcting for size of school, there remains an effect of socio-economic class. Specifically, schools in Anacostia will be seen to suffer higher pupil-teacher ratios than schools in the rest of the city, controlling for ADM.

With these two findings -- teacher-pupil ratio contributes to teacher cost differences, and that teacher-pupil ratios are an erratic function of size and a significant function of social class -- we will conclude our basic argument. Chapter VIII will then invest-

\*Defendants' Memorandum November 17, 1970, P.42.



gate the consequences of 5% equalization, and Chapter IX will summarize this research memorandum.





## I. Differences Between Areas of the City

We have demonstrated that there are differences in teacher expenditure per pupil between regions of the District. Two variables -- teacher salaries and pupil teacher ratio -- completely explain variation in teacher expenditure per pupil.

We have calculated the amount of the difference between two areas of the District explainable by each of these variables. This information is presented in Table VII-1. Taking the first row for example, this table reads as follows:

In fiscal 1970, teacher expenditures west of Rock Creek Park averaged \$551.80, to \$419.58 in the area east of the Anacostia River. The expenditures are 31.5% higher west of the Park than in Anacostia. Of the \$132.22 difference, 45.0 percent can be explained by higher teacher salaries, 48.2 percent can be explained by lower pupil-teacher ratios, and 6.8 percent can be explained by the interaction of these two elements, but by neither of them alone.\*

\*These results are not affected by findings in the previous chapter regarding possible economies of scale. We are not dealing in this chapter with the cause of the differences observed in pupil-teacher ratio or teacher salaries. To the extent that there is a technological relationship between either of these factors and scale of operations, then the differences in scale can be thought of as ultimate causes of the factors analyzed here. Given the correlation between pupil-teacher ratio and size of school, and the failure of Defendants to establish a technological relationship, either pupil-teacher ratio or scale could be the more basic cause of the other's observed relationship with teacher cost per school.



TABLE VII-1

Sources of the Differences in Per Pupil Teacher Expenditures Between Areas of Washington, D.C.

		Anacostia	West of the Park	West of the Park <sup>*</sup> Advantages	SOURCES OF DIFFERENCE		
					% Explained by Higher Salaries	% Explained by Lower P-T Ratios	% Explained by Interaction
fiscal '70		419.58	551.80	31.5%	45.0	48.2	6.8
fiscal '71		446.03	642.91	44.1%	38.4	53.4	8.2
		Remainder of City	West of the Park	West of the Park <sup>*</sup> Advantages			
fiscal '70		446.19	551.80	23.7%	66.2	29.2	4.6
fiscal '71		495.14	642.91	29.8%	47.9	45.6	6.5
		Anacostia	Remainder of City	Advantage of Re- mainder of City <sup>*</sup>			
fiscal '70		419.58	469.07	11.8%	-7.3	108.1	-.8
fiscal '71		446.03	533.04	19.5%	23.0	75.1	1.9

\*

The left-most column is always taken as the base of the percentage.



The procedure for explaining the \$132.22 difference in expenditures may be explained as follows. Suppose Anacostia pupil-teacher ratios were held constant but Anacostia teachers were paid West of the Park salaries; teacher expenditures per pupil as a result of this procedure would then be \$479.04 in Anacostia. Thus \$59.46 ( $\$479.04 - \$419.58 = \$59.46$ ) or 45.0% ( $\$59.46 \div \$132.22 = 45.0\%$ ) of the overall difference can be explained by the difference in teacher salaries.

Likewise if Anacostia teacher salaries are held constant, but pupil-teacher ratios were reduced to those west of the Park, teacher expenditures in Anacostia would be \$483.29. Thus \$63.71 ( $\$483.29 - \$419.58 = \$63.71$  or 48.2% of the overall difference can be explained by pupil-teacher ratios. The remaining 6.8% (i.e.  $100\% - (45.0\% + 48.2\%)$ ) is explained by the interaction of teacher salaries with pupil-teacher ratios.

In more precise terms, the calculation procedure is as follows:

Let  $P$  = number of pupils  
 $T$  = number of teachers  
 $C$  = total cost of teachers

Schools west of the Park will be designated by subscript

$w$

Anacostia schools will be designated by subscript

$a$

Thus  $\frac{C}{P}$  = teacher cost per pupil

and  $\left(\frac{C}{P}\right)_a$  = teacher costs per pupil in Anacostia.





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 $C$  = total cost of teachers

Schools west of the Park will be designated by subscript

$w$

Anacostia schools will be designated by subscript

$a$

Thus  $\frac{C}{P}$  = teacher cost per pupil

and  $(\frac{C}{P})_a$  = teacher costs per pupil in Anacostia.



In general

$$\frac{C}{P} = \frac{T}{P} \cdot \frac{C}{T}$$

and

$$\left(\frac{C}{P}\right)_a = \left(\frac{T}{P}\right)_a \left(\frac{C}{T}\right)_a$$

Let

$$\left(\frac{C}{P}\right)' = \left(\frac{T}{P}\right)_a \cdot \left(\frac{C}{T}\right)_w$$

This can be viewed as the teacher cost per pupil if Anacostia pupil-teacher ratio remained the same, but Anacostia teachers were paid west of the Park salaries.

The contribution of teacher salaries toward the higher teacher expenditures per pupil west of the Park is then

$$\frac{\left(\frac{C}{P}\right)' - \left(\frac{C}{P}\right)_a}{\left(\frac{C}{P}\right)_w - \left(\frac{C}{P}\right)_a}$$

Likewise, let

$$\left(\frac{C}{P}\right)'' = \left(\frac{T}{P}\right)_w \cdot \left(\frac{C}{T}\right)_a$$

This can be viewed as the teacher cost per pupil if Anacostia teacher salaries remained the same, but the pupil-teacher ratio was lowered to west of the Park ratios.



The contribution of pupil-teacher ratios to the higher teacher expenditures per pupil west of the Park is then

$$\frac{(\frac{C}{P})''_a - (\frac{C}{P})_a}{(\frac{C}{P})_w - (\frac{C}{P})_a}$$

There is no reason to expect the sum of these two calculations to equal 100%. If  $Z = X \cdot Y$ ,  $Z + \Delta Z = (X + \Delta X)(Y + \Delta Y) = XY + X\Delta Y + Y\Delta X + \Delta X \Delta Y$ . Thus  $\Delta Z$ , the increment to  $Z$ , should always be the sum of the amount due to an increment to  $Y$  at the original  $X$ , the amount due to the increment in  $Y$  at the original  $Y$ , and the amount due to the fact that both  $X$  and  $Y$  are incremented together.

## II. Pupil Teacher Ratio

Defendants claim to have reduced the city-wide pupil-teacher ratio. This is apparent in the data. However, the distribution of the pupil-teacher ratio is the relevant focus for this study. We find that there has been an actual increase in favoritism to schools west of the Park on this statistic. From fiscal 1970 to fiscal 1971 the pupil-teacher ratio declined 8.0% in schools west of Rock Creek Park, but only 1.5% in Anacostia schools. The tables presented in Chapter 2 show pupil-teacher ratios for different parts of the District in both fiscal 1970 and fiscal 1971. (See Tables II-1 through II-4.) Pupil-teacher ratios are lower west of the Park than in the rest of the District.\*

\* These calculations are based on the data submitted to the court on November 6, 1970, titled "Revised Edition of the Charts Which Were Filed with the Court on November 2, 1970."





In their November 17th submission, defendants present new pupil-teacher ratios, although they do not provide information on the number of teachers per se. The ratios are smaller than those we have calculated because defendants include librarians and counselors. We have discussed this problem in Chapter V. 5.

We have nonetheless employed these data to calculate the average pupil-teacher ratio for schools west of the Park and Anacostia. We find the following:\*

Pupil Teacher Ratios--Latest Data

<u>West of Park</u>	<u>Anacostia</u>	<u>Advantage of West of Park</u>
18.4	23.8	22.7

Thus, by whatever data, schools west of the park are advantaged with respect to the pupil-teacher ratio.

A. Relationship Between Pupil-Teacher Ratio and ADM

Defendants argue that the pupil-teacher ratio is a function of the size of the school only.\*\* We performed a regression analysis of the form:

$$Y = a + b_1(ADM) + b_2(ADM)(RC) + B_3(ADM)(ANAC)$$

\* Defendants give 18.3 as the average west of the Park. We assume there is a rounding error involved in this slight discrepancy.

\*\* See Defendants' Memorandum of November 17, p. 42.



From this equation we can ask whether the relationship between size and pupil-teacher ratio is the same in all areas of the city, where we define:

Y = pupil-teacher ratio

ADM = membership data

RC = a binary variable denoting schools west of Rock Creek Park

ANAC = a binary variable denoting schools in Anacostia

From this equation we determined

1) That ADM alone explained only 16.4% of the variation in pupil-teacher ratios.

2) That in general it would require an increase in school size of 200 students to increase pupil-teacher ratio by 1 student.

3) That this general figure becomes 300 when the differences among regions are accounted for. The relationships remain as they were in Anacostia and Rock Creek Park. That is, in these areas, there is a stronger relationship between size and pupil-teacher ratio than in the rest of the city.

4) By dividing the RC variable into variables for our Groups I and II, we find the following

$$Y = 18.80 + .0037ADM + .0151(ADM)(RC1) \\ + .0018(ADM)(RC2)^* + .00235(ADM)(ANAC)$$

or

$$Y = 18.80 + .0037ADM \text{ in general} \\ = 18.80 + .0188ADM \text{ in Group I} \\ = 18.80 + .0055ADM \text{ in Group II}^* \\ = 18.80 + .0060ADM \text{ in Anacostia}$$

\*The ADM coefficient is not significantly different from the general one of .0037.



This merely indicates that there is no fixed relationship between size of school as measured by ADM and pupil-teacher ratio. The relationship does seem to vary by 1 for one standard deviation of school size, but since the relationship between size and pupil-teacher ratio is erratic with respect to area of the city, we can find no reason to think there is much of a firm technological relationship lying behind it.

5) To calculate the overall effect on pupil-teacher ratio of being in these various areas, we calculated a regression:

$$Y = a + b_1 ADM + b_2 PERSP + b_3 RC1 + b_4 RC2 + b_5 ANAC$$

where the symbols have been previously defined. A coefficient in such a regression does not vary with ADM, but gives the incremental effect of being in a region, accounting for the strong negative effect on pupil-teacher ratio of having special students. The effect west of the park was negative (though insignificant) in Group II, positive and significant in Anacostia in Group I. By adding a variable for Model Schools we brought west of the Park to the average of the areas other than Model Schools and Anacostia, with Anacostia having in general a significantly higher pupil-teacher ratio--by over two pupils per teacher!--than the rest of the city. This is true having accounted for size. The entire equation explained 34.5 percent of the variance of the pupil-teacher ratio.

We conclude, once again, that there does seem to be some relationship between size and pupil-teacher ratio. We do not know if this is a technological phenomenon or just the way





these schools are managed. We would be prepared to believe that there is some technological effect, but it is not enough, it is clear, to explain all the disparity between the pupil-teacher ratio west of the Park and in Anacostia.



## B. Defendants' Scatter Diagrams

Defendants' argument about the relationship between ADM and their scatter diagram number eight, which plots pupil-teacher ratios against school enrollments. However, in addition to the inappropriateness of this technique,\* Defendants seem to have distorted the data so that the correlation appears higher than it actually is. Specifically, schools in one administrative unit have been plotted either separately or together, depending (apparently) on which better fits the correlation. Schools west of the park, with low pupil-teacher ratios, have been plotted separately in order to emphasize small enrollments. This applies to the unit comprised of Hyde, Fillmore, and Jackson, for example. Anacostia schools with small enrollments but high pupil-teacher ratios have been plotted as combined schools, appearing to have high enrollments and thus fit the correlation. This applies to schools such as Carver, Orr, and Randle Highlands. Carver, for example, has a relatively small enrollment - 304 and a high pupil-teacher ratio - 25.3. If the Defendants consistently plotted each school separately, this point would appear in the upper left area of the graph, and not visually within the upward sloping scatter. By combining schools, the point is moved to the right, closer to the other points.

\* Cf. our position against arguing from zero order correlations, Chapter IV.



### C. Education of Teachers

We have calculated the percentage of teachers west of the Park and in Anacostia who have Masters Degrees or higher.

These are:

#### % Teachers with M. A. or more

West of Park

Anacostia

21.6%

11.8%

These figures require no further comment.





CHAPTER VIII

CONSEQUENCES OF  $\pm 5\%$  EQUALIZATION

*See  
Defendants' note*

The equalization plan at issue would bring per pupil-teacher expenditures to within 5% of the mean. In Fiscal 1971, the mean teacher expenditure per pupil is \$499\*; a 5% range then includes schools spending as little as \$474 to schools spending as much as \$524. We have calculated the number of children in schools above and below this range, by \$25 intervals. In addition, we have calculated the number of needy children in each interval. This information appears in Tables VIII-1 and VIII-2.

To bring all schools within the 5% range, expenditures will be reduced on 31,893 children in 54 schools currently spending above \$524. The reduction in teacher expenditures in these schools will be \$2,740, 146 if they are just reduced to the upper extreme of the range. These schools contain 12,928 needy children, or 37.0% of all needy children. This almost agrees with Defendants' Memorandum which states:\*\*

\*We have not equalized spending on Special Schools, Bundy, Military Road, and Pierce, in these calculations. However, these schools do appear in the calculation of the mean, a slight error on our part.

\*\*These figures utilize revised data on free lunches submitted by telephone per Nov. 25th.

\*\*\*Defendants' Memorandum, P.41.



The defendants fail to note, however, that 36,242 children in 37 schools would gain from this equalization, and of these, 14,977 receive free lunches. If these schools are brought to the bottom of the allowable range--still \$48\* below the highest schools--they will receive an additional \$2,084,884. This leaves approximately \$650,000 which still can be distributed to these bottom schools to raise them somewhat closer to the mean.

What is obscured in these figures is the fact that the white students west of the park are only 3.1% of all elementary students. (White students make up 5.2% of all D.C. elementary students.) As defendants' chart on page 36 of their November 16 Memorandum shows, these students would lose. That is, the school system operates to the advantage of a few students, and these students would (properly) <sup>be</sup> "taxed" by the equalization formula. That a number of other children would gain and lose--more, we remind the court, gaining than losing--is not necessarily relevant to plaintiff's argument, as we understand it. The equalization formula would effectively remedy the favoritism demonstrated toward eight elementary schools west of Rock Creek Park.

\* To bring schools within the range we brought teacher expenditures below the mean up to \$475 for each school and down to \$523 for those above.



TABLE VIII-1\*

Distribution of Children in Low Expenditure Schools  
(Teacher Expenditure On Pupil, Fiscal 1971)

<u>Dollars Below Mean</u>	<u>Number of Children</u>	<u>Number of Needy Children</u>	<u>Expenditures to bring School to \$475 Average per Child**</u>
25-50	12134	4595	107366.34
50-75	9040	3956	350105.06
75-100	1907	1427	113206.47
100-125	6175	2425	517452.61
125-150	2221	873	267251.31
150-175	4011	1374	536899.74
175-200			
200-225			
225-250			
250-275			
275-300	<u>754</u>	<u>327</u>	<u>192601.76</u>
	36242	14977	\$ 2084883.29

\* Figures obtained from "Estimated Average Teachers Expenditure," and pages 25-26 of Defendants' Memorandum, "Needy Lunch Children by School, October 21, 1970." plus revised data November 25

\*\* This figure is the product of the number of children in the school and the average expenditure per child to bring expenditure per child up to \$475/down to \$523.





TABLE VIII-2

Distribution of Children in High Expenditure Schools  
(Teacher Expenditure per Pupil, Fiscal 1971)

<u>Dollars Above Mean</u>	<u>Number of Children</u>	<u>Number of Needy Children</u>	<u>Expenditures to bring School to \$475 Average per Child</u>
25-50	4273	1582	320039.38
50-75	9871	3762	345519.93
75-100	6046	2658	389960.51
100-125	3916	1118	340591.22
125-150	3011	1418	340279.72
150-175	371	19	55572.09
175-200	1059	200	168136.86
200-225	2159	1684	403306.04
225-250	774	420	159502.23
250-275	413	16	101812.76
275-300			
300-325			
325-350			
350-375	<u>341</u>	<u>51</u>	<u>115425.09</u>
	31893	12928	\$ 2740145.85



IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA

JULIUS W. HOBSON, et al., :

Plaintiffs :

v. : Civil Action No. 82-66

CARL F. HANSEN, et al., :

Defendants. :

MOTION OF DEFENDANTS TO VACATE THE DECREE AND  
DISMISS THE COMPLAINT

Defendants respectfully move the Court to vacate the decree entered herein and to dismiss the complaint. As grounds therefor defendants respectfully refer the Court to the reports of compliance filed by defendants on October 2, 1967 and January 2, 1968, and the memorandum of points and authorities filed in support of defendants' motion which demonstrate substantial compliance with the decree of the Court by these defendants.

/s/ Hubert B. Pair

HUBERT B. PAIR

Acting Corporation Counsel, D.C.

/s/ John A. Earnest

JOHN A. EARNEST

Assistant Corporation Counsel, D.C.

/s/ Matthew J. Mullaney, Jr.

MATTHEW J. MULLANEY, JR.

Assistant Corporation Counsel, D.C.

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District Building

Washington, D.C. 20004



IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA

JULIUS W. HOBSON, et al., :

Plaintiffs :

v. : Civil Action No. 82-66

CARL F. HANSEN, et al., :

Defendants. :

OPPOSITION OF DEFENDANTS TO PLAINTIFF HOBSON'S AMENDED  
MOTION FOR FURTHER RELIEF AND ENFORCEMENT OF DECREE

Defendants oppose plaintiff Hobson's amended motion for further relief and enforcement of decree filed herein and as grounds therefor respectfully refer the Court to the memorandum of points and authorities filed in opposition to plaintiff Hobson's motion.

/s/ Hubert B. Pair  
HUBERT B. PAIR  
Acting Corporation Counsel, D.C.

/s/ John A. R. Ernest  
~~JOHN A. R. ERNEST~~  
Assistant Corporation Counsel, D.C.

/s/ Matthew J. Hullaney, Jr.  
MATTHEW J. HULLANEY, JR.  
Assistant Corporation Counsel, D.C.  
Attorneys for Defendants  
District Building  
Washington, D.C. 20004





IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA

JULIUS W. HOBSON, et al., :

Plaintiffs :

v. : Civil Action No. 82-66

CARL F. HANSEN, et al., :

Defendants. :

CERTIFICATE OF SERVICE

I hereby certify that a copy of Motion of Defendants.  
to Vacate the Decree and Dismiss the Complaint; Opposition  
of Defendants to Plaintiff Hobson's Amended Motion for Further  
Relief and Enforcement of Decree ; and memorandum of points  
and authorities in support of both were mailed, postage pre-  
paid, to Ronald R. Allen, Esq., Attorney for Intervenor Bennett,  
1200 Tower Building, Washington, D.C. 20005; Peter F. Rousselot,  
Esq., Attorney for Movant Hobson, 815 Connecticut Avenue, N.W.,  
Washington, D.C. 20006 and to Joseph M. Hannon, Esq., Assistant  
United States Attorney, United States Courthouse, Washington,  
D.C. 20001, this 6<sup>th</sup> day of July, 1970.

/s/ Matthew J. Mullaney, Jr.  
MATTHEW J. MULLANEY, JR.  
Assistant Corporation Counsel, D.C.  
Attorney for Defendants  
District Building  
Washington, D.C. 20004



IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA

JULIUS W. HOBSON, et al., :

Plaintiffs :

v. :

Civil Action No. 82-66

CARL F. HANSEN, et al., :

Defendants.

MEMORANDUM OF POINTS AND AUTHORITIES IN OPPOSITION TO  
PLAINTIFF HOBSON'S AMENDED MOTION FOR FURTHER RELIEF  
AND ENFORCEMENT OF DECREE AND IN SUPPORT OF DEFENDANTS'  
MOTION TO VACATE THE DECREE AND DISMISS THE COMPLAINT

The defendants herein oppose plaintiff Hobson's motion for further relief and for enforcement of the decree of the Court. Defendants respectfully refer the Court to their original opposition and affidavit of Gertrude L. Williamson, filed on September 30, 1969, to plaintiff Hobson's motion for further relief and for enforcement of decree filed on or about July 30, 1969.

Standing

Plaintiff Hobson lacks standing to move the Court for further relief and for enforcement of the decree. At this time the Court should reexamine the direct interest of plaintiff Hobson in these proceedings, his position having changed materially since the complaint herein was filed. Williams v. Iberville Parish School Board, 273 F. Supp. 542 (E.D.La.1967).

The complaint in this civil action was filed on January 13, 1966. Julius W. Hobson sued individually and on behalf of his minor children Jean Marie Hobson and Julius W. Hobson, Jr. The complaint identified Mr. Hobson as a guardian and parent of the infant plaintiffs and one who was required by law to send the infant plaintiffs to public or private schools.





Defendants allege that the records of the Domestic Relations Branch of the District of Columbia Court of General Sessions reveal that Carol J. Hobson, the wife of Julius W. Hobson, obtained a judgment of absolute divorce from Mr. Hobson on April 3, 1968, and that custody of the Hobson's minor children was awarded without opposition to Mrs. Hobson, subject to the visitation rights of Mr. Hobson. It is further alleged that Julius W. Hobson, Jr. has graduated from the public schools of the District of Columbia and that Jean Marie Hobson is beyond elementary school age and her credentials are now at Paul Junior High School.

The essence of the constitutional right to equal protection is that it is a personal one, and the fact that someone else may be personally affected does not entitle one not personally affected to seek judicial relief. McCabe v. Atchison, T & S.F. Ry. Co., 235 U.S. 151 (1914); Bailey v. Patterson, 369 U.S. 31 (1962). It is clear that only a person specifically aggrieved or injured by a violation of a court decree may seek enforcement of the decree. See Annotation at 61 A.L.R. 2d 1083.

#### Impact Aid Funds

The expenditure of impact aid funds is not legally restricted. Public Law 81-874, 64 Stat. 1100, 20 U.S.C. 235 et seq. and Public Law 81-815, 64 Stat. 967, 20 U.S.C. 631, et seq. were enacted in September, 1950, to provide financial assistance to jurisdictions whose local educational institutions were burdened by the impact of certain federal activity. These acts contained no requirement that the states spend the





funds in under privileged areas. The District of Columbia was not at that time made eligible for entitlements under these laws, except for a very limited amount under Title 1 of Public Law 81-815, for a survey of school building needs.

On October 16, 1964, Public Law 88-665, 78 Stat. 1100, was enacted which enabled the District of Columbia to receive the same entitlements under impact aid as the several states. This was done by expanding the definitions of "State" to include the District of Columbia. 20 U.S.C. 244(8) and 20 U.S.C. 645(13). The 1964 Act contains no restrictions on the expenditure of funds. As mentioned above, there is no requirement in the original impact aid legislation that states spend the funds in under privileged areas. Consequently, there is no restriction in the United States Code which differentiates the District of Columbia from other states in the expenditure of impact aid funds.

The Conference Report to accompany the 1964 Act, dated September 30, 1964, includes the following language:

"It is the intention of the conferees that the Federal impact funds to be received by the District under Public Law 874 be used by the Board of Education solely for educational purposes, and that they be in addition to the funds made available for education in the District of Columbia budget. It also is the opinion of the conferees that insofar as is consistent with good educational administration, these funds be used to improve the quality and standards of the educational offerings in the underprivileged attendance areas of the city. The Superintendent of Schools is requested to report to the Senate Committee on Labor and Public Welfare and the House Committee on Education and Labor on the ways in which the availability of these funds during the year has improved the educational program for the children in the low income areas."



This language was referred to on the floor of the Senate in an apparent effort to settle a disagreement within the Congress on whether the House Appropriations Committee could earmark impact aid funds for specific uses. The debate would seem to indicate that while the Appropriations Committee may ask for any information it wants from the District of Columbia authorities, the jurisdiction of the Appropriations Committee does not extend to direct control of the purposes for which such moneys shall be expended. See Congressional Record, Senate 16096-16098, July 13, 1965.

In July, 1965, the report requested in the Conference Report to be submitted to the Senate Committee on Labor and Public Welfare and the House Committee on Education and Labor was submitted by the D.C. Public Schools. It is important to note that not all items in that report were for expenditures in underprivileged areas. Twenty-four percent of the funds, which amounted to \$600,000, was spent on a city-wide basis to correct system-wide textbook deficiencies. No objections were raised to this report. No further reports were required or requested.

In an opinion dated August 12, 1969, the Corporation Counsel, D.C., concludes that the use of impact aid funds is not legally restricted to the purposes expressed in the Conference Report. Hence, the defendants may, in their discretion, use impact aid funds for any educational purpose and are not restricted to expenditures to improve educational offerings in under privileged areas of the city. The defendants do choose to expend the bulk of the impact aid funds as suggested in the Conference Report. It is not improper,





however, for the defendants to combine impact aid entitlements and D.C. appropriation funds.' Plaintiff's allegations to the contrary fail to state a legal cause of action.

Per Pupil Expenditure

The scope of this lawsuit and the decree of the Court included the operation of the entire public school system of the District of Columbia, the elementary, junior high and senior high school levels. As a member of the Board of Education and Chairman of the Committee to Study the Implementation of the Wright Decree, Hobson was supplied per pupil expenditures for the elementary, junior high and senior high schools on May 26, 1969. Hobson's motion, however, addresses itself solely to the elementary schools of the District of Columbia, finding no fault with the per pupil expenditures at the junior high and senior high school levels. Yet, it is inconceivable that defendants would intentionally discriminate in the allocation of educational offerings at the elementary school level only. Plaintiff has not proven any intent to discriminate. Moreover, the evidence as arrayed by Hobson demonstrates that a difference of only \$20.00 per pupil exists between the highest and lowest income schools (Plaintiff's Chart 2). The amount is de minimus and is evidence of even handed treatment and not discriminatory action by defendants.

The mere fact that the per pupil expenditure varies within the elementary school level does not state a cause of action. Dandridge v. Williams, \_\_\_\_ U.S. \_\_\_\_ (decided April 6, 1970) 38 L.W. 4277; McManis v. Shapiro, 293 F. Supp. 327 (N.D. Ill. 1968), affirmed sub nom., 394 U.S. 322 (1969).





In Dandridge, appellees contended that Maryland's regulations under the Aid to Families with Dependent Children ("AFDC") program, 42 U.S.C. Section 601, et seq., violated the Equal Protection Clause of the Fourteenth Amendment. Each eligible family's grant is determined upon the number of children in the family and the circumstances under which the family lives, but the upper limit of the grant which any one family may receive is either \$250 or \$240, depending on where the family lives, regardless of the number of dependent children. Therefore, larger families receive proportionately less per member than do smaller families under the Regulations.

Rejecting appellees' contention that this policy violated their equal protection rights, the Court stated at p. 4281:

"\* \* \* here we deal with state regulation in the social and economic field not affecting freedoms guaranteed by the Bill of Rights, and claimed to violate the Fourteenth Amendment only because the regulation results in some disparity in grants of welfare payments to the largest AFDC families. For the Court to approve the invalidation of state economic or social regulation as 'overreaching' would be far too reminiscent of an era when the Court thought the Fourteenth Amendment gave it power to strike down state laws 'because they may be unwise, improvident, or out of harmony with a particular school of thought.' \* \* \*

"In the area of economics and social welfare, a State does not violate the Equal Protection Clause merely because the classifications made by its laws are imperfect. If the classification has some 'reasonable basis' it does not offend the Constitution simply because the classification 'is not made with mathematical nicety or because in practice it results in some inequality.' \* \* \* 'The problems of government are practical ones and may justify, if they do not require, rough accommodations - illogical, it may be, and unscientific.' \* \* \* 'A statutory discrimination will not be set aside if any state of facts reasonably may be conceived to justify it.' \* \* \* the Fourteenth Amendment gives the federal courts no power to impose upon the States their views of wise economic or social policy."



The Dandridge decision is in harmony with the rationale set forth in McInnis v. Shapiro, supra. In McInnis, elementary and high school students within four districts of Cook County, Illinois challenged the constitutionality of an Illinois statutory scheme that permitted variations of as much as 300% in the per pupil expenditure in the 1966-67 school year. The Court refused to apply to education expenditures a doctrine similar to the close scrutiny given laws which infringe First Amendment rights. Assuming that a more equitable distribution scheme could probably be devised, the Court stated:

"\* \* \* the allocation of public revenues is a basic policy decision more appropriately handled by a legislature than a court. \* \* \*"

The Court went on to cite language from McGowen v. Maryland, 366 U.S. 420, 425, 428 (1961), that:

"[T]he Fourteenth Amendment permits the States a wide scope of discretion in enacting laws which affect some groups of citizens differently than others. The constitutional safeguard is offended only if the classification rests on grounds wholly irrelevant to the achievement of the State's objective. State legislatures are presumed to have acted with their constitutional power despite the fact that, in practice, their laws result in some inequality."

And also cited language from Metropolis Theatre Co. v. City of Chicago, 228 U.S. 61, 69-70, that:

"To be able to find fault with a law is not to demonstrate its invalidity. It may seem unjust and oppressive, yet be free from judicial interference. The problems of government are practical ones and may justify, if they do not require rough accommodations - illogical, it may be, and unscientific. \* \* \* Mere errors of government are not subject to judicial review. It is only its palpably arbitrary exercises which can be declared void under the Fourteenth Amendment."





The Court pointed out at page 334 that there is no denial of Fourteenth Amendment rights unless plaintiffs are able to demonstrate "either an arbitrary exercise of legislative power or an invidious discrimination. \* \* \*" The Court concluded that:

"Even if the Fourteenth Amendment required that expenditures be made only on the basis of pupils' educational needs, this controversy would be non-justiciable. \* \* \* there are no 'discoverable and manageable standards' by which a court can determine when the Constitution is satisfied and when it is violated.

"The only possible standard is the rigid assumption that each pupil must receive the same dollar expenditures. Expenses are not, however, the exclusive yardstick of a child's educational needs. \* \* \* The desirability of a certain degree of local experimentation and local autonomy in education also indicates the impracticability of a single, simple formula. Effective, efficient administration necessitates decentralization so that local personnel, familiar with the immediate needs, can administer the school system. \* \* \* Even if there were some guidelines available to the judiciary, the courts simply cannot provide the empirical research and consultation necessary for intelligent educational planning. \* \* \*" Id at 335, 336.

The dominant ingredient in an educational offering and in the per pupil expenditure is the classroom teacher, but the evaluation of a teacher in a given educational environment defies quantitative analysis and is wisely left to the administration of the public school systems. For example, included in the current collective bargaining contract between the Board of Education and the Washington Teachers Union are ten items which "shall be among those used as a basis for evaluation of a classroom teacher":

- "1. knowledge of subject matter;
2. ability to communicate with students;
3. knowledge of materials and techniques in his or her field;
4. knowledge of and rapport with students and control of classroom;





5. willingness to innovate new ideas and techniques, and to use instruction time efficiently;
6. method for evaluating students and meeting their needs;
7. ability to adjust to situations (teaching levels and readiness levels of students);
8. evidence of lesson planning and preparation;
9. attendance and regularity at post of duty including being available both during the school day and after pupils are dismissed for the day for conferences concerning pupils, and/or professional matters;
10. performance in building responsibility."

To decree a strict equalization of per pupil expenditures at the elementary school level is to substitute a dollar sign having no rational relationship to the ability of a classroom teacher to perform in his assignment for the experienced judgment and discretion of a school administrator taking into account the criteria mentioned above. Such an order would severely damage the educational program in the District of Columbia public schools. Plaintiff's motion establishes no legal predicate for such action by this Court.

#### Overcrowding

The defendants have continued to press the "good faith effort" which the Court noted (p. 432) to eliminate overcrowding and inadequate school facilities. Defendants have been particularly concerned with the elimination of overcrowding and have assigned the highest priority in capital budget considerations to the Northeast and Anacostia regions of the city.

In August, 1966, the Board of Education adopted the following priorities with reference to the Public Schools Building Program.



#### Priority I

The elimination of overcrowding - The criteria for overcrowding is the excess of pupil membership over the capacity of the buildings at the 30:1 pupil/teacher ratio in an area for elementary schools. In the secondary schools the ratio of 25:1 is used.

#### Priority II

The replacement of inadequate school structures that cannot be suitably and economically modified in accordance with current educational criteria.

#### Priority III

The modernization of existing school structures which can be suitably and economically modified.

#### Priority IV

The provision of the additional seats needed to reach the 25-pupil maximum class size standard adopted by the Board of Education on April 20, 1966.

Subsequently, these priorities were modified in action taken by the Board of Education on March 31, 1969. The sense of this action was that Areas 9 and 14 had highest priority for elementary schools, Area 7 for junior high schools, and Area 5 for senior high schools.

The fiscal year 1970 and 1971 Capital Outlay Budgets reflect these priorities.

An educational park feasibility study costing \$630,000.00 was approved by the Board as its second priority item in the fiscal year 1970 budget.

While its efforts to eliminate overcrowding through construction of new facilities continue, defendants have undertaken to bus volunteering elementary school children from overcrowded schools not only to elementary schools west of Rock Creek Park as ordered by the Court but to under capacity schools east of Rock Creek Park as well.





During the school year 1968-69, approximately 1,700 elementary school pupils were bussed from over-capacity schools to under-capacity schools. Approximately 1,400 elementary school pupils were bussed to under-capacity schools during the 1969-70 school year.

At the elementary school level, substantial equalization of enrollment-capacity figures must be primarily based upon new school facilities. It is not possible to redraw elementary school boundaries and effect substantial equalization of enrollment-capacity because of the concentration of overcrowding in certain parts of the city, the size of elementary school structures, the size of elementary school boundary regions, and the age of elementary school pupils. Contrast this with the substantial equalization of secondary school enrollment-capacity figures by altering school boundaries which can be and was accomplished at the junior and senior high school levels.

There, pursuant to the long-range pupil assignment plan submitted on January 2, 1968, a survey of secondary schools showed that some schools had enrollments which far exceeded their capacities and others had enrollments which were under-capacity. To correct this condition, a School Boundary Committee, composed of school and community personnel, was established to examine school boundaries and recommend changes. Several boundary maps for the junior and senior high school levels were constructed, published in the press and submitted to the public in a series of meetings in the senior high schools. Thereafter, the Boundary Committee





recommended to the Board of Education certain school boundaries in an effort to equalize the use of school facilities throughout the city and to improve racial, economic and social integration. The new boundaries were approved by the Board on May 8, 1968 and have been revised from time to time as enrollment-capacity figures dictate.

The revised school boundaries survived a challenge in the District Court in August, 1968 in the case of Virginia Morris, et al. v. William Manning, et al., Civil Action No. 2134-68.

The foregoing approach to the equitable elimination of overcrowding in the schools of the District of Columbia represents a rational approach chosen by those charged with the supervision and operation of the public schools of the District of Columbia and these defendants should be permitted by the Court to pursue this course of action.

#### Teacher Assignment

The defendants have carried out assignment and transfer procedures as stated in the compliance reports of October 2, 1967 and January 2, 1968. Target schools have been established and assignments and transfers have been controlled by the target school data. A substantial recruitment effort has been undertaken to obtain a significant influx of white personnel into the school system.

Beginning in November, 1967, the administrative staff secured from the principals of the elementary, junior high and senior high schools, reports on the racial composition of their faculties as well as any changes that might have occurred since the previous report. A practical standard for



measuring results of efforts to achieve equitable racial balance was established using the proportion of Negro to white teachers in the school system on October 19, 1967. On that date, Negroes constituted 85.0% of the faculties in the elementary schools, 77.2% of the junior high schools, and 63.0% in the senior high schools. Any school within ten percent of the figure at its school level, either above or below, was thought to present no immediate problem of imbalance. Any school with a proportion of Negro teachers ten percent or more below this percentage level was considered a target school for the assignment of Negro teachers only. Any school with a proportion of Negro teachers more than ten percent above the percentage was considered a target for assignment of white teachers only, until such time as it reached the non-target area. The non-target areas thus ranged from 75.0% to 94.0% in the elementary schools; 67.2% to 86.2% in the junior high schools; and 53.0% to 72.0% in the senior high schools.

The target status is continually changed to conform to the percentage of teachers, Negro and white, at each level found in the most recent membership report. This means that adjustments can be made more frequently, since the status established as a result of one report would govern actions only until the results of the next membership report could be determined. On June 6, 1969, the non-target areas ranged from 70.6% to 90.6% in the elementary schools; 72.2% to 92.2% in the junior high schools; and 50.8% to 70.8% in the senior high schools. On January 30, 1970 the non-target schools ranged from 71.8% to 91.8% in the elementary schools; 73.6%





to 93.6% in the junior high schools; and 51.7% to 71.7% in the senior high schools.

The first compliance report, dated November 3, 1967, showed that there were 35 elementary school buildings needing Negro personnel; 52 non-target schools; and 47 schools needing white personnel. The compliance report dated June 6, 1969, showed that there were 28 elementary school buildings needing Negro personnel; 70 non-target schools; and 38 schools needing white personnel. On January 30, 1970 there were 28 Negro target schools, 81 non-target schools and 27 white target schools. The number of buildings with 100.0% Negro faculties has been reduced from 24 to 6. No buildings have all white faculties.

In the junior high schools on November 3, 1967, there were 4 Negro target schools; 10 non-target schools; and 14 white target schools. On June 6, 1969, there were 4 Negro target schools; 21 non-target schools; and 4 white target schools. On January 30, 1970 there were 4 Negro target schools; 26 non-target schools and no white target schools.

At the senior high school level, on November 3, 1967, there were 5 Negro target schools; 1 non-target school; and 5 white target schools. On June 6, 1969, there were 2 Negro target schools; 7 non-target schools; and 2 white target schools. On January 30, 1970 there was 1 Negro target school, 9 non-target schools and 1 white target school.

At no time since 1967 has any of the secondary schools had faculties which were 100% of either race. Significantly, within this same period the number of Negro administrators assigned to schools west of Rock Creek Park increased. The





table below indicates that on October 19, 1967, and June 6, 1969, and January 30, 1970, administrators were assigned as follows:

	10-19-67		6-6-69		1-30-70	
	W	N	W	N	W	N
Eaton-Hearst	1		1		1	
Hardy-Key	1		1			1
Hyde-Fillmore J.	1			1		1
Janney	1		1		1	
Lafayette	1		1		1	
Mann-Stoddert	1		1			1
Murch	1		1		1	
Oyster	1		1		1	
Total Elementary	8	0	7	1	5	3
Deal	3		2	1	2	2
Gordon	2	1	1	2	1	2
Total Junior High	5	1	3	3	3	4
Western	2	1	2	2	2	2
Wilson	3	1	1	3	1	3
Total Senior High	5	2	3	5	3	5

In summary, schools west of Rock Creek Park in October 1967, had only three Negro officers or 1/7 of the total number of administrators. These same schools in January 30, 1970 had 12 Negro officers or over 50% of the total of 24 officers.

#### Equalization of Particular Resources

Between April and June, 1969 the school administration submitted to the Board of Education several charts dealing with the distribution of public school resources and programs and concerning particularly Special Projects, Average Expenditure Per Pupil, Essential Equipment Inventory, Curriculum Progress, Textbooks, and School Libraries.

The Special Projects and Program Survey demonstrates a substantial effort being made by the defendants to establish special programs to meet the needs of educationally disadvantaged children in low income areas. According to the



survey the 30 schools in the area designated as the most severely disadvantaged had in operation a total of 523 programs during fiscal year 1969. Another group of 52 schools which have been designated as educationally disadvantaged had in operation a total of 452 special programs. In comparison to the total of 975 special programs operating in these 82 disadvantaged schools, the remaining 100 schools had in operation a total of 363 special programs.

A further effort was made during the school year 1969-70 to concentrate the funding in the disadvantaged areas by a further concentration of special programs in disadvantaged schools.

Reports and recommendations of the administration dealing with Textbooks, Equipment, Course Offering and Libraries were submitted to the Board of Education and approved on August 1, 1969 and September 26, 1967. During the 1969-70 school year the administration has actively undertaken the corrective measures approved by the Board to more nearly equalize the availability of these educational resources.

Defendants have moved to equalize curriculum opportunities by providing system-wide, free selection of courses. A student may now choose from a uniform, system-wide course selection list that is provided to each student. The student is required to arrange his program to take four units of English, one and one-half units of social studies (American History and American Government), one unit of mathematics, one unit of laboratory science and the regular program of physical education during his secondary school career. (7 1/2 units). The remainder of the 16 units required for graduation





(8 1/2) may be chosen from a wide variety of courses. Some courses have sequential requirements -- (second year French requires completion of first year French) -- but in all other cases each student is free to take any course on the system-wide list, provided that 15 or more students in his building also request it. A student course request form and instructions is supplied to each student.

In developing a program, a student and his parents are assisted by his counselor and other school personnel. The student's program is, however, his own. It is his response to his expectations, needs, inclinations and perception of his abilities.

The extent of integration of faculties and demountables to relieve overcrowding is not believed to have had a substantial impact on the 1967-68 per pupil expenditure figures as it would have on later school years. Regarding teacher integration at the elementary school level, there were 52 non-target schools in November, 1967, but there were 70 non-target schools in June, 1969, and 81 non-target schools in January, 1970. In addition, the administration has been taking continuing steps to equalize specific resources in the elementary schools during the 1969-70 school year pursuant to recommendations referred to above approved by the Board of Education. Even assuming that a per pupil expenditure figure is a meaningful yardstick for educational offerings, it is submitted that those figures for the 1967-68 school year are untimely and should not form the basis for any further decree by this Court.





### Conclusion

The equalization of educational offerings is a long-range, far-reaching project that cannot be accomplished in a short-period of time or with a formula of per-pupil expenditure equalization within a range of 5% proposed by plaintiff Hobson. The task is particularly difficult at the elementary school level because of the degree of overcrowding and the relative inflexibility of school boundaries when compared with secondary school levels. The defendants have expended untold man hours toward the goal of equal educational offering. Guidelines, standards of equality and decision-making data is burdensome to acquire and assemble. This job is being eased now by the school system's automatic data processing capacity. With the aid of data processing, more progress toward equalization is expected. Since their decision to abide by the decree of this Court to the present time defendants have acted in full good faith with the expertise, time, money, facilities, and data capacity available to them. The policies and actions of defendants are plainly without discrimination or malice toward any segment of the public school population. A simple formula offered by plaintiff -- which incidentally he failed to offer while a member of the Board of Education -- belies the complex nature of public education and equal educational offering and the efforts of these defendants to comply with the letter and spirit of the decree of this Court.

Accordingly, it is respectfully requested that plaintiff's amended motion for further relief and for enforcement of the decree be denied and that the Court vacate the decree and dismiss the complaint filed herein.

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HUBERT B. PAIR

Acting Corporation Counsel, D.C.



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JOHN A. EARNEST  
Assistant Corporation Counsel, D.C.

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IN THE  
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No. 82-66

MOTION OF PLAINTIFFS FOR JUDGMENT  
ON THE PLEADINGS

Plaintiffs respectfully move that this Court grant judgment on the pleadings in accordance with Rule 12(c) of the Federal Rules of Civil Procedure for the reasons set forth in the attached Memorandum of Points and Authorities.

Respectfully submitted,

*Peter F. Rousselot*

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Attorneys for Plaintiffs





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No. 82-66

OPPOSITION OF PLAINTIFFS TO  
DEFENDANTS' MOTION TO VACATE THE  
DECREE AND DISMISS THE COMPLAINT

Plaintiffs oppose defendants' Motion to Vacate the Decree and Dismiss the Complaint for the reasons set forth in the attached Memorandum of Points and Authorities.

Respectfully submitted,

*Peter F. Rousselot*

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Cambridge, Massachusetts 02138

Attorneys for Plaintiffs



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Certificate of Service

I hereby certify that a copy of Motion of Plaintiffs for Judgment on the Pleadings; Opposition of Plaintiffs to Defendants' Motion to Vacate the Decree and Dismiss the Complaint; and Memorandum of Points and Authorities in support of both were sent by first class mail, postage prepaid, this 14th day of July, to each member of defendant District of Columbia School Board, in care of Gertrude L. Williamson, Executive Secretary of that Board at 415 12th Street, N.W., Washington, D.C. 20004; defendant Acting Superintendent of Schools of the District of Columbia, at 415 12th Street, N.W., Washington, D.C. 20004; Hubert B. Pair, Acting Corporation Counsel, D.C., attorney for defendants, District Building, Washington, D.C. 20004; Don R. Allen, attorney for intervenors Mr and Mrs. William Bennett, 1200 Tower Building, Washington, D.C. 20005.



Peter F. Rousselot



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No. 82-66

MEMORANDUM OF POINTS AND AUTHORITIES IN SUPPORT OF  
PLAINTIFFS' MOTION FOR JUDGMENT ON THE PLEADINGS AND  
IN SUPPORT OF PLAINTIFFS' OPPOSITION TO DEFENDANTS' MOTION  
TO VACATE THE DECREE AND DISMISS THE COMPLAINT

I

Plaintiffs respectfully move for judgment on the pleadings in accordance with Rule 12(c) of the Federal Rules of Civil Procedure. This Motion for Judgment on the Pleadings is limited to those pleadings which directly address themselves to plaintiffs' Amended Motion for Further Relief and for Enforcement of Decree, filed May 19, 1970. Plaintiffs specifically exclude from this motion for judgment on the pleadings defendants' Motion to Vacate the Decree and Dismiss the Complaint, filed July 6, 1970, and those portions of defendants' Memorandum of Points and Authorities, also filed on that date, which are addressed thereto. This latter motion of defendants is discussed in part II of this Memorandum of Points and Authorities.

A. Standing

Plaintiff Hobson clearly has standing to move this Court for further relief and for enforcement of the decree. Assuming as true all the facts about Mr. Hobson's present status alleged at pages 1-2 of defendants' Memorandum of Points and Authorities, those facts show on their face that Mr. Hobson retains a sufficient interest in these proceedings to have standing.

Even if neither of Mr. Hobson's children were attending the public schools of the District of Columbia, and even if he had not been





an original plaintiff in the class action which led to this Court's prior judgment and decree, he would still have standing to maintain this enforcement action. Data Processing Service v. Camp, 397 U.S. 150 (1970); Flast v. Cohen, 392 U.S. 83 (1968). Under Flast, the proper test to be applied to determine standing is "whether the dispute sought to be adjudicated will be presented in an adversary context and in a form historically viewed as capable of judicial resolution". 392 U.S. at 101. This dispute meets that test.

Finally, even if this Court were to entertain doubts about plaintiff Hobson's standing, it need not reach that question in view of the Motion to Intervene as a Matter of Right Pursuant to Rule 24(a) of the Federal Rules of Civil Procedure, filed herein by Mrs. Olivia P. Humphrey, individually and on behalf of Amy M. Humphrey, on June 30, 1970. Those intervenors clearly meet even the overly narrow test of standing sought to be applied by defendants, <sup>1/</sup> and they seek exactly the same relief as plaintiff Hobson for exactly the same reasons. Several other parents have similarly come forward and expressed to plaintiffs' counsel their desire to "help in any way they could" in the present proceedings. Therefore, it is useless for defendants to seek to avoid the merits by questioning Mr. Hobson's standing.

B. Plaintiffs' Requested Relief

The relief plaintiffs request is that this Court issue the order set forth in paragraphs 3a-c of plaintiffs' Amended Motion for Further Relief and for Enforcement of Decree, filed May 19, 1970.

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<sup>1/</sup> Intervenor Amy M. Humphrey attends Stanton Elementary School, one of the District of Columbia Elementary Schools located East of the Anacostia River. The expenditures per pupil at Stanton Elementary School in fiscal 1968 were substantially below the system-wide average expenditures per pupil for District of Columbia Elementary Schools.



C. Plaintiffs Are Entitled To The Relief Requested

1. Exhibits A and B, Charts 2 and 4, and Table 1, all of which appear in the Appendix to Plaintiffs' Memorandum of Points and Authorities in support of their Amended Motion for Further Relief and for Enforcement of Decree of May 19, 1970, conclusively establish that defendants have failed to equalize objectively measurable educational resources in District of Columbia elementary schools in contravention of this Court's prior decision. 269 F. Supp. at 496. They also establish that defendants have violated this Court's permanent injunction against discrimination on the basis of "economic status in the operation of the District of Columbia public school system." 269 F. Supp. at 517.

Defendants have nowhere contested the authenticity of any of the data contained in that Appendix. Nor have they sought to file herein comparable data on per pupil expenditures for later fiscal years. In view of the fact that the fiscal 1968 data were made available on May 26, 1969, defendants failure on July 6, 1970 to submit to this Court comparable fiscal 1969 data, exclusively under their control, can only be construed as an admission that such data do not substantiate their unsupported allegation that the fiscal 1968 data should not be relied on because it is "untimely". Of necessity, the compilation of per pupil expenditure data can never be kept right up to date.<sup>2/</sup>

2. Thus it becomes clear that defendants' real objections are not to the data but rather to the legal conclusions from that data plaintiffs have drawn and the remedy plaintiffs seek. Initially, it should be observed that many of defendants' legal arguments are foreclosed

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<sup>2/</sup> Plaintiffs respectfully refer this Court to pages 9-11 of their Memorandum of Points and Authorities, filed May 19, 1970, for a discussion of the history of defendants' attempts to avoid their legal obligations to equalize objectively measurable educational resources on the grounds of the "untimeliness" of the data.



by this Court's prior decision herein. In this category one must place defendants ringing rhetoric that "[t]o decree a strict equalization of per pupil expenditures at the elementary school level is to substitute a dollar sign having no rational relationship to the ability of a classroom teacher to perform in his assignment" (Def's. Memorandum, July 6, 1970, page 9). This Court has already decided that objectively measurable resources must be equalized. 269 F. Supp at 496. Similarly, at various stages in their Memorandum e.g., pages 5, 18, defendants argue that the absence of "intentional discrimination" or the presence of "good faith" shields them from further judicial action in this case. In view of this Court's explicit rejection of the "intentional discrimination" test in equal protection cases such as this one (see 269 F. Supp at 497), it is startling that defendants at this late date are relying on decisions such as Metropolis Theatre Co. v. Chicago, 228 U.S. 61 (1913). As this Court previously held:

[T]he arbitrary quality of thoughtlessness can be as disastrous and unfair to private rights and the public interest as the perversity of a willful scheme [269 F. Supp. at 497.]

Defendants rely heavily on Dandridge v. Williams, 397 U.S. 471 (1970) and McInnis v. Shapiro, 293 F. Supp. 327 (N.D. Ill. 1968), aff'd sub nom. McInnis v. Ogilvie, 394 U.S. 322 (1969). But both cases are readily distinguishable on their facts from this case. Both Dandridge and McInnis involved challenges to programs of state-wide application. In Dandridge the Court permitted Maryland to set an upper limit on a family's welfare grant, even though larger families were penalized by the grant formula. As stated by the Court, the case involved "the validity of a method used by Maryland \* \* \* to reconcile the demands of its needy citizens with the finite resources available to meet those demands." 397 U.S. at 472. In McInnis, a three-judge court upheld a state-wide educational resource allocation formula even though it relied primarily on local property tax revenues to support education, thereby





permitting school districts with a higher dollar value of taxable property per pupil to raise more money to support education than poor school districts.

In both Dandridge and McInnis, plaintiffs proposed an allocation standard based on "need". In McInnis the Court concluded that the "need" standard, as applied to education, was not judicially manageable. 293 F. Supp at 335-336. It further found reasonable the Illinois legislature's formula on the grounds that it gave each school district a measure of local control and autonomy. 293 F. Supp. at 333.

However, there is only one school district in the District of Columbia. Thus, that district's method of allocating educational resources has not been and should not be shielded from scrutiny on the McInnis theory of preserving local autonomy. Plaintiffs herein have proposed a judicially manageable standard to govern what defendants do after they receive their finite resources, not, as in Dandridge, a standard which on its face would require a state to obtain more resources. Thus, plaintiffs' proposed remedy does not place this Court in a position where its decree, on its face, will require the legislature to modify its tax structure in some way as in Dandridge or McInnis.

On the contrary, intra-district equality in the allocation of educational resources has been the law of the land at least since Plessy v. Ferguson, 163 U.S. 537 (1896), set forth the "separate-but-equal" doctrine. Brown v. Board of Education, 347 U.S. 483 (1954), did not eliminate the requirement of intra-district equality in the allocation of educational resources, and many courts, including this Court in its original decision herein, have re-affirmed this requirement.<sup>3/</sup>

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<sup>3/</sup> In support of this requirement see the cases cited at page 7 of Plaintiffs' Memorandum of Points and Authorities, filed May 19, 1970.



The conclusion is inescapable that none of the cases relied upon by defendants support the proposition that the allocation of educational resources need not be equalized within a single school district. The requirement that such resources be equalized is the law of this case, and is the law that has been consistently applied by the federal courts for 74 years.

3. Two additional points raised by defendants merit brief comment. First, with respect to impact aid funds, defendants state (at pages 4-5 of their July 6, 1970 Memorandum) that "[i]t is not improper \* \* \* for the defendants to combine impact aid entitlements and D.C. appropriation funds. Plaintiffs allegations to the contrary fail to state a legal cause of action." Plaintiffs nowhere allege that these funds may not be "combined." Plaintiffs have requested only that this Court order defendants to report the expenditure of these funds separately as outlined in paragraph 3.b. of Plaintiffs' Motion of May 19, 1970. Plaintiffs also contend that the legislative history of impact aid in the District of Columbia, as set forth by defendants at pages 2-5 of their Memorandum of July 6, 1970, indicates that although defendants are permitted to use impact aid funds for certain limited purposes other than "to improve the quality and standards of the educational offerings in the underprivileged attendance areas of the city", defendants are required to make a substantial effort to see if ways can be found, consistent with "good educational administration", to spend all impact aid funds in the underprivileged attendance areas.<sup>4/</sup> For example, plaintiffs respectfully suggest that this Court should make it clear to defendants that it would be contrary to the intent of Congress to use impact aid funds merely

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<sup>4/</sup> Thus plaintiffs completely disagree with the conclusions of the Corporation Counsel, reported at page 4 of defendants' July 6, 1970 Memorandum, that "the use of impact aid funds is not legally restricted to the purposes expressed in the Conference Report." In plaintiffs' opinion, the use of such funds is restricted to those purposes.



to replace regular budget funds diverted from schools which now have higher expenditures per pupil than the city-wide average in order to equalize such expenditures.

Secondly, defendants' Memorandum of July 6, 1970, states at page 5 that "Hobson's motion \* \* \* addresses itself solely to the elementary schools \* \* \* finding no fault with the per pupil expenditure at the junior high and senior high school levels". Contrary to the implication of this sentence, plaintiffs have never contended that defendants are free of fault with respect to per pupil expenditures at the junior or senior high school level. This issue simply was not raised in plaintiffs' May 19, 1970 Motion. In fact, it is plaintiffs position that expenditures per pupil in junior and senior high schools should also be equalized in accordance with the standards set forth in plaintiffs' Motion of May 19, 1970.

## II

Plaintiffs strongly oppose defendants' Motion to vacate the Decree and Dismiss the Complaint, and respectfully suggest to this Court that there are several grounds for not granting defendants such relief.

First of all, the evidence of substantial violations of this Court's prior opinion and decree on the issue of per pupil expenditures - the only issue presently raised by plaintiffs - is, in and of itself, a sufficient ground to retain the decree in full force and effect.

Secondly, even if defendants could show that they had complied with every aspect of this Court's prior decree, that would not be grounds for vacating that decree because that decree contains various permanent injunctions which should never be vacated.

Finally, although plaintiffs have not examined in detail defendants' various allegations of compliance with the decree in their





memorandum of July 6, 1970<sup>5/</sup>, plaintiffs suggest that there are several reasons why such allegations should be viewed with suspicion. The history of the School Board's and School Administration's attempts to comply with this Court's prior decision, some of which has been set forth at pages 5-7 of plaintiffs' Memorandum of May 19, 1970, reveals spotty and unsystematic attempts at compliance; buck-passing between the School Board and the School Administration; and, at times, outright hostility to this Court's prior decision herein.<sup>6/</sup> Most recently, three members of the School Board, in a "Motion to Strike Reply of Board of Education to Plaintiffs' Amended Motion for Further Relief and for Enforcement of Decree", filed July 7, 1970, have raised serious questions about the extent to which that Board has considered various issues of compliance.

Conclusion

For the reasons outlined above, plaintiffs respectfully move for judgment on the pleadings and oppose defendants' motion for vacation of the decree and dismissal of the complaint.

Respectfully submitted,

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Of Counsel:

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Washington, D.C. 20005

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Attorneys for Plaintiffs

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<sup>5/</sup> A detailed examination of defendants' allegations would, of necessity, require that defendants answer extensive interrogatories in each of the areas in which they allege compliance. Other forms of discovery might also be necessary. Plaintiffs see no reason to burden defendants or this Court with such proceedings at this time.

<sup>6/</sup> For example, at a School Board meeting held on July 7, 1969, one School Board member, reacting to a suggestion that further proceedings in this Court might be necessary to enforce this Court's prior decision, stated: "All right, I will get before Judge Wright. I do not care anything about Judge Wright." [Transcript, page 111.]



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No. 82-66

MOTION TO INTERVENE

Mrs. Olivia P. Humphrey, individually and on behalf of Amy M. Humphrey, hereby moves, pursuant to Rule 24(a) of the Federal Rules of Civil Procedure, for leave to intervene in this action as a matter of right pursuant to Rule 71 of the Federal Rules of Civil Procedure, in order to file the attached "Motion in Support of Plaintiffs' 'Amended Motion for Further Relief and for Enforcement of Decree'" filed in this Court on May 19, 1970.

Respectfully submitted,

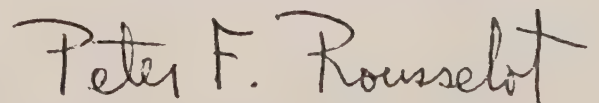


Peter F. Rousselot  
815 Connecticut Avenue, N.W.  
Washington, D. C. 20006

Attorney for Intervenors

Certificate of Service

I, Peter F. Rousselot, hereby certify that a copy of the foregoing "Motion to Intervene" together with the Memorandum of Points and Authorities in support thereof, was delivered by hand, this 30th day of June, 1970, to Hubert B. Pair, Acting Corporation Counsel, D.C., Attorney for Defendants, District Building, Washington, D. C. 20004, and sent by first class mail, postage prepaid to Don R. Allen, Attorney for intervenors Mr. and Mrs. William Bennett and Mrs. Valerie Allen, 1200 Tower Building, Washington, D. C. 20005.



Peter F. Rousselot



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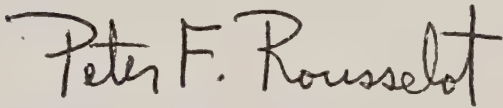
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No. 82-66

MEMORANDUM OF POINTS AND AUTHORITIES  
IN SUPPORT OF MOTION TO INTERVENE

Rules 24(a) and 71 of the Federal Rules of Civil Procedure

Respectfully Submitted,



Peter F. Rousselot  
815 Connecticut Avenue, N.W.  
Washington, D.C. 20006

Attorney for Intervenors





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MOTION IN SUPPORT OF PLAINTIFFS' "AMENDED MOTION  
FOR FURTHER RELIEF AND FOR ENFORCEMENT OF DECREE"

Intervenor Mrs. Olivia P. Humphrey, individually and on behalf of Intervenor Amy M. Humphrey, hereby moves to support Plaintiffs' "Amended Motion for Further Relief and for Enforcement of Decree", filed in this Court on May 19, 1970, and as grounds therefor states as follows:

1. Intervenorors reside at 3008 Alabama Avenue, S.E., Washington, D. C.
2. Intervenor Amy M. Humphrey is the daughter of Intervenor Mrs. Olivia P. Humphrey.
3. Intervenor Amy M. Humphrey attends Stanton Elementary School, one of the District of Columbia Elementary Schools located East of the Anacostia River.
4. The expenditures per pupil at Stanton Elementary School in fiscal 1968 were substantially below the system-wide average expenditures per pupil for District of Columbia elementary schools.

WHEREFORE, Mrs. Olivia P. Humphrey, individually and on behalf of Amy M. Humphrey, hereby moves that this Court issue the order referred to in paragraphs 3a-c of Plaintiffs' "Amended Motion for Further Relief and for Enforcement of Decree" filed in this Court on May 19, 1970.

Respectfully submitted,

*Peter F. Rousselot*

Peter F. Rousselot  
815 Connecticut Avenue, N.W.  
Washington, D. C. 20006


Attorney for Intervenors

Certificate of Service

I, Peter F. Rousselot, hereby certify that a copy of the foregoing "Motion in Support of Plaintiffs' "Amended Motion for Further Relief



and for Enforcement of Decree", together with the Memorandum of Points and Authorities in support thereof, was delivered by hand, this 30th day of June, 1970, to Hubert B. Pair, Acting Corporation Counsel, D.C., Attorney for Defendants, District Building, Washington, D. C. 20004, and sent by first class mail, postage prepaid to Don R. Allen, Attorney for intervenors Mr. and Mrs. William Bennett and Mrs. Valerie Allen, 1200 Tower Building, Washington, D. C. 20005.

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Peter F. Rousselot



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No. 82-66

MEMORANDUM OF POINTS AND AUTHORITIES IN SUPPORT OF MOTION IN SUPPORT OF  
PLAINTIFFS' "AMENDED MOTION FOR FURTHER RELIEF AND FOR ENFORCEMENT OF DECREE

Intervenors incorporate herein by reference Plaintiffs' "Memorandum of Points and Authorities in Support of Amended Motion for Further Relief and for Enforcement of Decree", filed in this Court on May 19, 1970.

Respectfully submitted,



Peter F. Rousselot  
815 Connecticut Avenue, N.W.  
Washington, D.C. 20006

Attorney for Intervenors





UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA

HOBSON, et al.

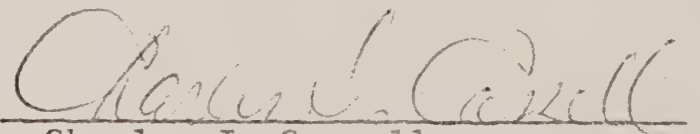
v.

Hansen, et al.

Civil Action No. 82-66

MOTION OF CHARLES I. CASSELL, MARTHA S.  
SWAIM AND BARDYL R. TIRANA TO STRIKE REPLY  
OF BOARD OF EDUCATION TO PLAINTIFFS'  
AMENDED MOTION FOR FURTHER RELIEF AND FOR  
ENFORCEMENT OF DECREE

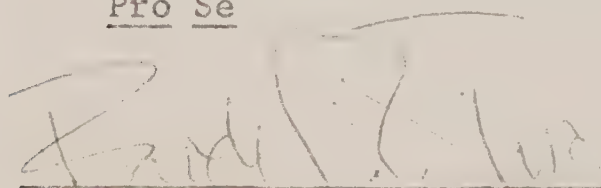
Charles I. Cassell, Martha S. Swaim and Bardyl R. Tirana hereby move the Court, upon the record herein and the affidavit of Bardyl R. Tirana annexed hereto, to strike the reply of the Board of Education of the District of Columbia to the Amended Motion of Plaintiffs for Further Relief and for Enforcement of Decree, and for such other and further relief in the premises as may be just. The grounds for this motion are set forth in Movants' Points and Authorities filed herewith.



Charles I. Cassell  
Apartment 407  
1845 Summit Place, N. W.  
Washington, D. C. 20009  
Pro Se



Martha S. Swaim  
649 Maryland Avenue, N. E.  
Washington, D. C. 20002  
Pro Se




Bardyl R. Tirana  
3509 Lowell Street, N. W.  
Washington, D. C. 20016  
Pro Se



CERTIFICATE OF SERVICE

I, Bardyl R. Tirana, hereby certify that on the 7th day of July, 1970, I sent by first class mail, postage prepaid, copies of the foregoing Motion of Charles I. Cassell, Martha S. Swaim and Bardyl R. Tirana to Strike Reply of Board of Education, together with the Points and Authorities in support thereof, and the affidavit of Bardyl R. Tirana, to Hubert B. Pair, Acting Corporation Counsel, D. C., District Building, Washington, D. C., 20004; to Don R. Allen, Esq., attorney for intervenors, 1200 Tower Building, Washington, D. C. 20005; and to Peter F. Rousselot, Esq., Hogan & Hartson, 815 Connecticut Avenue, N. W., Washington, D. C. 20006, attorney for plaintiffs.

  
Bardyl R. Tirana



UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA

HOBSON, et al.

v.

HANSEN, et al.

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Civil Action No. 82-66

POINTS AND AUTHORITIES IN SUPPORT OF  
MOTION TO STRIKE REPLY OF BOARD OF  
EDUCATION TO PLAINTIFFS' AMENDED MOTION  
FOR FURTHER RELIEF

As grounds for their motion to strike the reply of the Board of Education to Plaintiffs' Amended Motion for Further Relief and for Enforcement of Decree, Movants, Charles I. Cassell, Martha S. Swaim and Bardyl R. Tirana state as follows:

1. Movants are all members of the Board of Education. Mrs. Swaim was elected from Ward Six, and took office in January, 1969. Mr. Cassell and Mr. Tirana were elected at-large, and took office in January, 1970. Movants all were personally served with a copy of Plaintiffs' Amended Motion for Further Relief and for Enforcement of Decree on May 19, 1970.

2. At no time since the filing of the Amended Motion has the Corporation Counsel, who is charged by law with representing the Board of Education, communicated with the Board of Education concerning the Amended Motion or the position to be taken by the Board of Education in reply to the Amended Motion.

3. At no time since the filing of the Amended Motion has the Board of Education communicated with the Corporation Counsel concerning the Amended Motion or the position to be taken by the Board of Education in reply to the Amended Motion.

4. At no time since the filing of the Amended Motion has the Board of Education discussed or considered the merits of the Amended Motion or the position to be taken by the Board





of Education in reply to the Amended Motion.

5. In accordance with the Rules of the Board of Education, Mr. Cassell, Mr. Tirana and Mattie G. Taylor, another member of the Board of Education, called for a Special Meeting of the Board on June 24, 1970 "to consider what position the Board should take in regard to the amended motion filed by plaintiff in Hobson v. Hansen on May 19, 1970." The call for the Special Meeting continued:

" . . . In view of the fact that we have had no communication from the Corporation Counsel whatever on this matter, we feel that it is essential that he be present for questioning and advice, and that he take no action in the proceedings before the Court without specific prior Board authorization.

"We request that you schedule the meeting at the earliest possible date."

6. The President of the Board failed and refused to schedule the Special Meeting.

7. On July 7, 1970, movants read in the Washington Post an account of a reply to the Amended Motion having been filed on behalf of the Board of Education. Movants have never seen the reply, and as of the time of the preparation of this motion to strike, July 7, 1970, had never seen the reply.

8. The filing of the reply by the Corporation Counsel has never been authorized by the Board of Education.

WHEREFORE, movants pray that the Court strike the Reply of the Board of Education to Plaintiffs' Amended Motion for Further Relief and Enforcement of Decree, and for such other and further relief in the premises as may be just.

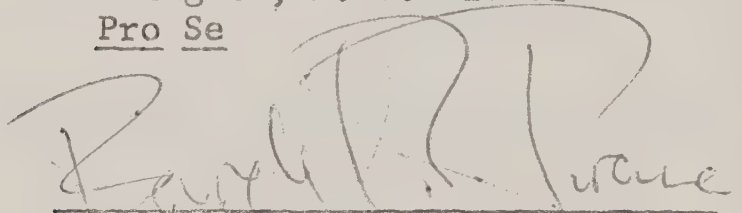




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Pro Se



UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA

HOBSON, et al.

v.

Civil Action No. 82-66

HANSEN, et al.

AFFIDAVIT OF BARDYL R. TIRANA  
IN SUPPORT OF MOTION TO STRIKE  
REPLY OF BOARD OF EDUCATION TO  
PLAINTIFFS' AMENDED MOTION

DISTRICT OF COLUMBIA: ss,

BARDYL R. TIRANA, being duly sworn, deposes and says to the best of knowledge, information and belief, as follows:

1. I have read the Motion of Charles I. Cassell, Martha S. Swaim and Bardyl R. Tirana to Strike Reply of Board of Education to Plaintiffs' Amended Motion, and the Points and Authorities in Support thereof, and all of the allegations of fact therein are true and correct.

2. I was personally served with a copy of Plaintiffs' Amended Motion herein on May 19, 1970. Having read the motion, and being concerned about the policy questions raised in it, I attempted to discuss the motion at the 10th Stated Business Meeting of the Board of Education on May 20, 1970. The following colloquy occurred (Transcript, pp. 184-187):

"MR. TIRANA: . . . . I think we are generally having a problem with the Corporation Counsel and all of the Work of the Board.

"I understand we have been sued a series of times in the past few weeks. And I as a Board member am a party to the suits. I read about one when I arrived in Washington yesterday.

"The only way I can find out about the fact that I am being sued is to read about it in the paper.





"I wrote a letter about it to the Corporation Counsel requesting information on the Hobson v. Hansen litigation, and we haven't gotten a response on that either.

"Certainly it is the president's wish to have counsel directly under the employ of the Board, and it might be explored at our next meeting of the Board of Education.

"On the subject of the suit that I read about yesterday in the newspaper, and a copy of the pleadings which I got independently, the charges are sufficiently serious -- and this is the compliance with the Wright Decree -- that I and at least three (3) other members of the Board: Mr. Cassell, Mrs. Swaim, and Mrs. Taylor -- would like to request that the Chair call a Special Meeting to discuss the response of the Board of Education to the motion which was filed in court yesterday. I would suggest that the time for the Special Meeting be set by the Chair at a date convenient to all members of the Board in early June. This is not a matter on which we should leave the Superintendent out hanging.

"I think that we should give it our attention and take the political consequences rather than leaving him out in the cold - in the forefront.

"CHAIRMAN ALLEN: On that particular point, now, if you are saying that three (3) members are petitioning the Chair then you would petition in writing and state the purpose for the call of the meeting and we will establish a meeting at a time when we can have a quorum of the Board present. But I would have to add, first of all, that if my copy of this petition has come I have not yet received it. Secondly, we would have to discuss counsel and secure counsel, and it would seem that this would be something that we would want to discuss in closed session and not in open session at least initially.

"MRS. TAYLOR: Madam Chairman?

"CHAIRMAN ALLEN: Mrs. Taylor?

"MRS. TAYLOR: We have already secured counsel. We voted when the motion was first filed.

"CHAIRMAN ALLEN: Is this the same thing that has been in the paper all these months? You mean it is just being filed?

"MRS. TAYLOR: No, it's coming up, you know.



"CHAIRMAN ALLEN: No. I don't.

"MRS. SWAIM: The actual brief.

"MRS. TAYLOR: The actual brief has been filed.

"CHAIRMAN ALLEN: Well, I don't know.

"MRS. TAYLOR: But when the motion was first filed we voted to have the Corporation Counsel represent us as we went back into litigation, and since that time we have heard nothing from the Corporation Counsel. I know several Board members have received the briefs. I was served down in my office with a copy.

"CHAIRMAN ALLEN: Well, they haven't found me yet!

"MRS. TAYLOR: Well, they are on their way to you I can assure you!

"CHAIRMAN ALLEN: Well, I have a draw full of briefs but there is no problem with holding a meeting of the Board at any time it is necessary to discuss the matter. However, if you wish to petition the Chair, and is what I understood Mr. Tirana to say, then that has to be done in "writing."

"MR. TIRANA: Madam Chairman?

"CHAIRMAN ALLEN: If you feel that's necessary.

"MR. TIRANA: Madam Chairman?

"CHAIRMAN ALLEN: Mr. Tirana?

"MR. TIRANA: This is a meeting of record, we are all present. Before members who are petitioning the Chair -- that is, the four (4) members who are petitioning the Chair are here present and petitioning the Chair for the Special Meeting for the purpose of considering . . ."

3. When by June 17, 1970 the Board still had received no advice or communication of any kind from the Corporation Counsel, I telephoned an Assistant Corporation Counsel, Matthew J. Mullaney, Jr., to ask for a status report. He told me that the Corporation Counsel was planning to file a reply to the Amended Motion on June 22, 1970 without any consultation with or specific authority from the Board. I told Mr. Mullaney that in my opinion such action would be unauthorized. Mr. Mullaney





said that he would confer with Mr. Pair, Acting Corporation Counsel. Mr. Mullaney telephoned me back later that day to advise that Mr. Pair thought that no specific authorization from the Board was required for whatever position the Corporation Counsel was going to take on behalf of the Board in the reply to the Amended Motion.

4. Believing that the Amended Motion raised policy questions of broad significance for the Board which should be discussed with counsel, two other members of the Board and I, in accordance with the Rules of the Board of Education, on June 24, 1970 called for a Special Meeting of the Board "to consider what position the Board should take in regard to the amended motion filed by plaintiff in Hobson v. Hansen on May 19, 1970." A copy of the call is annexed hereto as Exhibit A.

5. The President of the Board failed and refused to schedule the Special Meeting.

6. The reply filed by the Corporation Counsel on July 6, 1970 (or, at least reported by the Washington Post to have been filed on July 6, 1970), has never been discussed or authorized by the Board of Education. I have never, to the time of execution of this affidavit, seen a copy of the reply or known of its contents except as they were reported by the Washington Post.

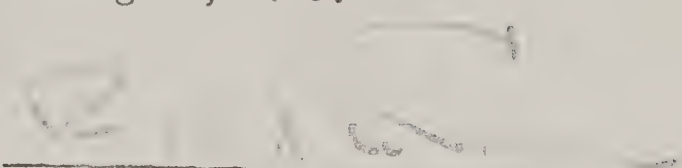
7. Since I have been a member of the Board of Education, January 26, 1970, the Board has never in good faith discussed compliance with the decree, as amended, herein, other than from time to time receiving reports from the administration of the public schools.

IN WITNESS WHEREOF, I have hereunto set my hand this

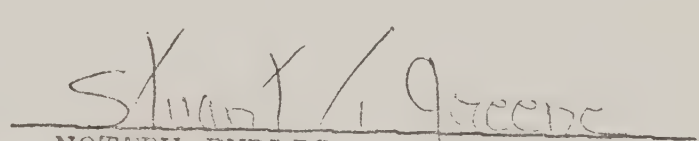




seventh day of July, 1970 at Washington, D. C.

  
BARDYL R. TIRANA

SUBSCRIBED AND SWORN TO, before me, this 7th day of July, 1970.

  
NOTARY PUBLIC

My Commission Expires July 14, 1970



BOARD OF EDUCATION OF THE DISTRICT OF COLUMBIA  
PRESIDENTIAL BUILDING  
415 TWELFTH STREET, N. W.  
WASHINGTON, D. C. 20004

ANITA FORD ALLEN, PRESIDENT  
JAMES E. COATES, VICE PRESIDENT  
MURIEL M. ALEXANDER  
CHARLES I. CASSELL  
EDWARD L. HANCOCK  
NELSON C. ROOTS  
ALBERT A. ROSENFELD  
MARTHA S. SWAIM  
MATTIE G. TAYLOR  
BARDYL R. TIRANA  
EVIE M. WASHINGTON  
GERTRUDE L. WILLIAMSON  
EXECUTIVE SECRETARY

1970 JUN 24  
EXEC

June 24, 1970

Mrs. Anita Ford Allen  
President  
Board of Education of the  
District of Columbia  
415 Twelfth Street, N. W.  
Washington, D. C. 20004

Dear Mrs. Allen:

Pursuant to the Rules of the Board of Education, the undersigned hereby call for a Special Meeting of the Board to consider what position the Board should take in regard to the amended motion filed by plaintiff in Hobson v. Hansen on May 19, 1970. In view of the fact that we have had no communication from the Corporation Counsel whatever on this matter, we feel that it is essential that he be present for questioning and advice, and that he take no action in the proceedings before the Court without specific prior Board authorization.

We request that you schedule the meeting at the earliest possible date.

Sincerely yours,

Charles I. Cassell  
Charles I. Cassell

Mattie G. Taylor  
Mattie G. Taylor

Bardyl R. Tirana  
Bardyl R. Tirana



IN THE  
UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA

Hobson, et al.

v.

Hansen, et al.

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No. 82-66

AMENDED MOTION FOR FURTHER RELIEF  
AND FOR ENFORCEMENT OF DECREE

Plaintiff Julius W. Hobson, an original plaintiff in the class action which lead to this Court's prior judgment and decree herein of June 19, 1967, together with intervening plaintiffs X and Y who are also members of that class, hereby move for further relief and for enforcement of that decree as follows:

1. In its prior opinion herein, this Court held that "the minimum the Constitution will require and guarantee is that for their objectively measurable aspects these schools be run on the basis of real equality, at least unless any inequalities are adequately justified."  
[269 F. Supp. at 496; emphasis added.]

2. In that opinion, this Court also noted, after reviewing various forms of inequality in the distribution of educational resources between District of Columbia schools, that "the fact that median per-pupil expenditure in the predominantly Negro elementary schools has been





a clear \$100 below the figure for predominantly white schools, and \$132 below the schools west of the Park, summarizes all the inequalities above, and perhaps significant others". [269 F. Supp. at 495-496.]

3. In 1967, this Court deferred any more specific remedy for educational resource inequality "until the dust surrounding this fall's 'substantial' teacher integration settles" (269 F. Supp. at 499). It did so presumably because it believed that reassignment of some "high salaried" white teachers to predominantly Negro schools would "serve as a vehicle for equalizing faculty" (id.) and thereby also for equalizing per-pupil expenditures (see 269 F. Supp. at 438). But this Court in 1967 did permanently enjoin "defendants, their agents, officers, employees and successors, and all those in active concert and participation with them \*\*\* from discriminating on the basis of racial or economic status in the operation of the District of Columbia public school system." [269 F. Supp. at 517.]

4. That injunction against discrimination on the basis of economic status and this Court's holding that the minimum required and guaranteed by the Constitution is real equality in the allocation of objectively measurable educational resources has been violated.

5. In fiscal year 1968, the most recent year for which the defendants have been able or willing to supply data, per-pupil expenditures in the District of Columbia elementary schools were marked by the same kinds of disparities as the fiscal year 1964 data upon which



this Court's prior opinion and decree were based. In some instances, the disparities were significantly worse. It is very likely that the fiscal 1968 data mask even greater disparities in the allocation of "regular budget" educational resources than they appear to show on their face because the fiscal 1968 data--unlike the fiscal 1964 data--include "impact aid funds" which are required by statute to be concentrated "in the underprivileged attendance areas of the city" and which are substantial in amount. [See 269 F. Supp. at 440.]

6. Among the inequalities, even including impact aid funds, are the following:

a. Per-pupil expenditures range from a low of \$292 in one elementary school to a high of \$798 at another--a spread of \$506. (In fiscal 1964, the range was from \$\_\_\_\_\_ to \$\_\_\_\_\_--a spread of \$ 411 .)

b. Only one of the highest 35 elementary schools in per-pupil expenditures lies east of the Anacostia, and only 5 of the highest 58 are located there, while none of the schools west of Rock Creek Park are among the District's lowest 45 schools in per-pupil expenditures and only one is among the lowest 58.

c. The average per-pupil expenditure at all elementary schools west of the Park is \$460.80 while the average at all elementary schools east of the Anacostia River is \$358.06 -- a spread of over \$100.



7. On the basis of the foregoing summary, as elaborated more fully in the attached Memorandum of Points and Authorities incorporated herein by reference, plaintiffs hereby move that this Court order the defendants to equalize per-pupil expenditures in District of Columbia elementary schools as follows:

- a. On or after October 1, 1970, per-pupil expenditures from the regular District of Columbia budget (ex-  
cluding impact aid funds, Title I ESEA funds, UPO funds, and, in general, all funds not from the regular congressional appropriation) in any single elementary school (not "administrative unit"), shall not deviate by more than 5% from the average per-pupil expenditure for all elementary schools in the District of Columbia school system. For good cause shown to this Court in advance, the 5% limit may be exceeded. Good cause shall include only provision of compensatory education for educationally deprived pupils or provision of special educational services for the mentally retarded or physically handicapped.
- b. By October 1, 1970, and by October 1 of each succeeding year thereafter, defendants shall serve on plaintiffs, file with the Clerk of this Court, and cause to be disseminated to all parents of elementary school children in the District of Columbia information sufficient to establish compliance with the order for per-pupil expenditure equalization. At a minimum, such information shall include, in tabular form for each elementary school (not administrative unit), data in the following categories: (1.) Name of school; (2.) Income level of the neighborhood from latest available U.S. Census data; (3.) Average daily membership; (4.) Total





expenditures from the regular D.C. congressional appropriation only; (5.) Per-pupil expenditures from the regular D.C. congressional appropriation only; (6.) Total expenditures from impact aid funds; (7.) Per-pupil expenditures from impact aid funds; (8.) Total expenditures under Title I of the Elementary and Secondary Education Act of 1965; (9.) Per-pupil expenditures under the Elementary and Secondary Education Act of 1965; (10.) Total of all other expenditures; (11.) Total of all expenditures from all sources; (12.) Per-pupil expenditures from all sources.

As noted in the attached Memorandum of Points and Authorities, it should be stressed that the remedy plaintiffs request herein does not constitute an endorsement of the idea that "equal dollars" maximize "equal educational opportunity". In the District of Columbia large sums of money running into the millions of dollars are available for strictly compensatory purposes under the impact aid program and under Title I of the Elementary and Secondary Education Act of 1965. Plaintiffs contend that the elementary school system ought to be properly operated for a reasonable period of time with equalized per-pupil expenditures from the regular budget in all schools supplemented with special federal compensatory funds (and other funds for other special purposes from federal and private sources) before deciding whether defendants should be required by this Court to spend regular budget funds in a compensatory manner. (However, plaintiffs' proposed order permits and plaintiffs



would encourage defendants to voluntarily spend regular budget funds in a compensatory manner.)

For all the reasons outlined above and in the attached Memorandum of Points and Authorities incorporated herein by reference, plaintiffs respectfully move that this Court issue the order referred to in paragraphs 7. a. and b. above.

Respectfully submitted,



IN THE  
UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA

Hobson, et al.

v.

Hansen, et al.

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No. 82-66

AMENDED MOTION FOR FURTHER RELIEF  
AND FOR ENFORCEMENT OF DECREE

Plaintiff Julius W. Hobson, an original plaintiff in the class action which lead to this Court's prior judgment and decree herein of June 19, 1967, together with intervening plaintiffs X and Y who are also members of that class, hereby move for further relief and for enforcement of that decree as follows:

1. In its prior opinion herein, this Court held that "the minimum the Constitution will require and guarantee is that for their objectively measurable aspects these schools be run on the basis of real equality, at least unless any inequalities are adequately justified." [269 F. Supp. at 496; emphasis added.]

2. In 1967, this Court deferred any more specific remedy for educational resource inequality "until the dust surrounding this fall's 'substantial' teacher integration settles" [269 F. Supp. at 499]. It





did so presumably because it believed that reassignment of some "highest salaried" white teachers to predominantly Negro schools would "serve as a vehicle for equalizing faculty" (id.) and thereby also for equalizing per-pupil expenditures [see 269 F. Supp. at 438]. But this Court in 1967 did permanently enjoin "defendants, their agents, officers, employees and successors, and all those in active concert and participation with them \*\*\* from discriminating on the basis of racial or economic status in the operation of the District of Columbia public school system." [269 F. Supp. at 517.]

3. That injunction against discrimination on the basis of economic status and this Court's holding that the minimum required and guaranteed by the Constitution is real equality in the allocation of objectively measurable educational resources has been violated based on raw data supplied by defendants themselves.

4. In fiscal year 1968, the most recent year for which the defendants have been able or willing to supply data, per-pupil expenditures in the District of Columbia elementary schools were marked by the same kinds of disparities as the fiscal year 1964 and 1965 data upon which this Court's prior opinion and decree were based. In some instances, the disparities were significantly worse. It is very likely that the fiscal 1968 data mask even greater disparities in the allocation



of "regular budget" educational resources than they appear to show on their face because the fiscal 1968 data--unlike the fiscal 1964 and 1965 data--include "impact aid funds" which are required by statute to be concentrated "in the underprivileged attendance areas of the city" and which are substantial in amount. [See 269 F. Supp. at 440.]

5. Among the inequalities, even including impact aid funds, are the following:

- a. Per-pupil expenditures in the highest income neighborhoods (above \$10,000) in fiscal 1968 are substantially higher than those in low income neighborhoods just as they were in fiscal 1965.
- b. Per-pupil expenditures in fiscal 1968 range from a low of \$292 in one elementary school to a high of \$798 at another--a spread of \$506. In fiscal 1964, the range was from \$216 to \$627--a spread of \$411. Thus the spread has increased by almost \$100.
- c. The average per-pupil expenditure in fiscal 1968 at all elementary schools west of Rock Creek Park was \$103 higher than the average at all elementary schools east of the Anacostia River.



6. On the basis of the foregoing summary, as elaborated more fully in the attached Memorandum of Points and Authorities incorporated herein by reference, plaintiffs hereby move that this Court order the defendants to equalize per-pupil expenditures in District of Columbia elementary schools as follows:

- a. On or after October 1, 1970, per-pupil expenditures from the regular District of Columbia budget (ex-  
cluding impact aid funds, Title I ESEA funds, UPO funds, and, in general, all funds not from the regular congressional appropriation) in any single elementary school (not "administrative unit"), shall not deviate by more than 5% from the average per-pupil expenditure for all elementary schools in the District of Columbia school system. For good cause shown to this Court in advance, the 5% limit may be exceeded. Good cause shall include only provision of compensatory education for educationally deprived pupils or provision of special educational services for the mentally retarded or physically handicapped.
- b. By October 1, 1970, and by October 1 of each succeeding year thereafter, defendants shall serve on plaintiffs, file with the Clerk of this Court, and cause to be disseminated to all parents of elementary school children in the District of Columbia information sufficient to establish compliance with the order for per-pupil expenditure equalization. At a minimum, such information shall include, in tabular form for each elementary school (not administrative unit), data in the following categories: (1.) Name of school; (2.) Income level of the neighborhood from latest available U.S. Census data; (3.) Average daily membership; (4.) Total





expenditures from the regular D.C. congressional appropriation only; (5.) Per-pupil expenditures from the regular D.C. congressional appropriation only; (6.) Total expenditures from impact aid funds; (7.) Per-pupil expenditures from impact aid funds; (8.) Total expenditures under Title I of the Elementary and Secondary Education Act of 1965; (9.) Per-pupil expenditures under Title I of the Elementary and Secondary Education Act of 1965; (10.) Total of all other expenditures; (11.) Total of all expenditures from all sources; (12.) Per-pupil expenditures from all sources.

- c. In each report filed and disseminated pursuant to the requirements of paragraph 6.b. above or in any document filed in response to this Motion, defendants must specifically indicate in what respects, if any, their methods of computing the data in that report or document differ from the methods used in computing the fiscal 1964 and 1965 data previously cited by this Court or the fiscal 1968 data analyzed in this motion.

As noted in the attached Memorandum of Points and Authorities, it should be stressed that the remedy plaintiffs request herein does not constitute an endorsement of the abstract idea that "equal dollars" necessarily maximize "equal educational opportunity". Plaintiffs agree that in certain instances, such as educating pupils from underprivileged neighborhoods, it is sound policy to spend more than the system-wide average to maximize equality of opportunity. However, in the District



of Columbia, large sums of money running into the millions of dollars are available for strictly compensatory purposes under the impact aid program and under Title I of the Elementary and Secondary Education Act of 1965. Plaintiffs contend that the elementary school system ought to be properly operated for a reasonable period of time with equalized per-pupil expenditures from the regular budget in all schools supplemented with special federal compensatory funds (and other funds for other special purposes from federal and private sources). before deciding whether defendants should be required by this Court to spend regular budget funds in a compensatory manner. (However, plaintiffs' proposed order permits and plaintiffs would encourage defendants to voluntarily spend regular budget funds in a compensatory manner.)

For all the reasons outlined above and in the attached Memorandum of Points and Authorities incorporated herein by reference, plaintiffs respectfully move that this Court issue the order referred to in paragraphs 6.a. - c. above. After issuing such an order, this Court should retain jurisdiction to insure compliance therewith.

Respectfully submitted,



UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA

JULIUS W. HOBSON et al.,

Plaintiffs

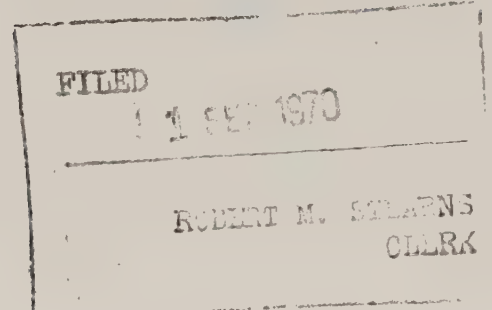
v.

Civil Action No. 82-66

CARL F. HANSEN et al.,

Defendants

O R D E R



In consideration of the Amended Motion for Further Relief and for Enforcement of the Decree.

In 1967 this court held that "the minimum the Constitution will require and guarantee is that for their objectively measurable aspects [District of Columbia] schools be run on the basis of real equality, at least unless any inequalities are adequately justified." Hobson v. Hansen, D. D.C., 269 F.Supp. 401, 496 (1967). The decree permanently enjoined the District of Columbia school board "from discriminating on the basis of racial or economic status in the operation of the \* \* \* public school system." Id. at 517.

At that time, the court found that there was substantial inequality in per-pupil expenditures among the District schools, and that it was the predominantly white, high-income areas west of Rock Creek Park which benefited from this inequality. The court noted further that per-pupil expenditure is a measure which "summarizes" most other relevant distributions of educational resources. On the assumption that compliance with other items of the 1967 decree would have the secondary effect of equalizing overall resource distribution, however, the court deferred any more specific remedy for the inequality in per-pupil expenditures.

The best data now available to this court indicates that there still is a substantial differential in per-pupil expenditure which favors the elementary schools west of the Park. The area west of the Park is the





richest in the District.<sup>1</sup> The elementary school population of that area is also the whitest in the city.<sup>2</sup> Yet in the 1970 fiscal year, the elementary schools west of the Park had an average per-pupil expenditure of <sup>713</sup>~~\$769~~ out of regular funds while the city-wide average was <sup>5</sup>~~\$485.82~~—a difference of <sup>22</sup>~~31~~ per cent. "Thus it appears to the court that the richest and whitest area of the city is being substantially favored over poorer and blacker areas. A prima facie case of violation of the 1967 decree seems to have been made out."

In the face of this continuing discrimination in per-pupil expenditures, plaintiffs in the class action which led to this court's first judgment and decree have moved for the further relief of an order to equalize per-pupil expenditures. Under their proposed plan, this court would order that per-pupil expenditures from the regular District of Columbia budget at each elementary school shall not deviate by more than five per cent from the average per-pupil expenditure for all elementary schools in the system. The five per cent limit may be exceeded only for "adequate justification," and such justification would be defined to include only provision of compensatory education for educationally deprived pupils or provision for special educational services for the mentally retarded or physically handicapped.

In response to plaintiffs' proposal for further relief, defendants urge "that there are fundamental reasons, for the most part beyond the school system's control, which contribute to expenditure disparities and which make adherence to the request of the plaintiffs for a 5% range a

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<sup>1</sup>The latest income figures presented to this court are from the 1959 census. In that year, the 13 school districts west of the Park stood among the top 14 in the whole city in terms of median family income. Their average median income was \$11,761 while the city-wide average was only slightly more than half that, \$4,969.85.

<sup>2</sup>In 1966-67, the only nine elementary schools with over 85% white enrollment were west of the Park, and no elementary school west of the Park had less than a 67% white enrollment. According to figures filed with this court by the school board, the overall white population of the city's elementary schools had declined further in 1970—to only 5.6% of total enrollment. However, 10 of the schools west of the Park still have an average white enrollment of approximately 78.5%, while only one other elementary school in the District apparently has even a white majority.



devastating requirement in terms of personnel transfers and assignments." Of the reasons given by the school board for the existing disparities, some seem truly to be beyond their control. Examples are differences in the age of school buildings and the cost of upkeep, in the amount of vandalism that occurs at different schools, and in the use of special equipment and personnel at select schools to provide compensatory services for the educationally deprived pupils, for the mentally retarded, and for the physically handicapped.

Another reason given by defendants for the disturbing disparities in per-pupil expenditures is the over- and undercrowding at given schools, caused and perpetuated in part by rapid demographic changes in the District of Columbia.<sup>3</sup> Obviously, overcrowding will lower the per-pupil costs of fixed expenses such as those for teacher salaries, maintenance, heating, custodial and administrative services, and undercrowding will raise the per-pupil costs of such services. Unlike the other factors mentioned above, however, disparities in per-pupil expenditure attributable to disparities in school population may be eliminated.

Therefore, it is ORDERED that on or before September 28, 1970, defendants indicate, by memorandum filed in the record in this case, why busing of pupils from low-income area, overwhelmingly black, overcrowded schools in the District to high-income area, whiter and underpopulated schools would not eliminate unnecessary differences in per-pupil expenditures relating to over- and undercrowding, which defendants concede to be one of the causes of the lingering and spectacular inequality in overall per-pupil expenditures.

The school board also argues that the "apparent" expenditure discrimination is caused by the presence of a disproportionately large share of the most highly paid teachers on the faculties of schools west of the

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<sup>3</sup>In the affidavit of Acting Superintendent Henley we are given enrollment information for nine of the 13 elementary schools west of the Park. The average enrollment for these nine schools was approximately 70% of capacity. Although the information about other schools is incomplete, the board's sample from the low expenditure group included such over-enrollments as 178.1% at Congress Heights and Annex and 155.5% at Young.





Park. Although defendants are making a good faith effort to spread the most highly paid teachers throughout the school system, they report that this is a goal not immediately within their control and that for the court to order absolutely equal distribution of highly-paid teachers would be unduly burdensome. While the court recognizes the force of this contention, it also notes that teachers' salaries account for the largest category of regular fund expenditures, and that good teaching is the heart of any school program. In 1967 this court found that teacher salaries were an indicator of years of experience, graduate degrees, status within the system—and thus, to a large extent, of teacher quality. For the schools at which they teach, the most highly salaried teachers constitute a significant advantage. If it is too burdensome for the school board to spread such teachers evenly throughout the system, then it would seem that the schools which do not have their share of such teachers should be compensated with a corresponding benefit, as for example with special equipment or teaching assistants, et cetera.

Therefore, it is ORDERED that on or before September 28, 1970, defendants indicate, by memorandum filed in the record in this case, why the school board should not devise a plan to equalize within a five per cent variation expenditures for teaching costs out of regular funds among all District of Columbia elementary schools for the 1971 fiscal year.

\_\_\_\_\_  
J. SKELLY WRIGHT\*  
UNITED STATES CIRCUIT JUDGE

Washington, D. C.

September 1, 1970

\_\_\_\_\_  
\*Sitting by designation pursuant to 28 U.S.C. § 291(c).





IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA

JULIUS W. HOBSON, et al., :  
Plaintiffs, : Civil Action No. 82-66  
v. :  
CARL F. HANSEN, et al., :  
Defendants.

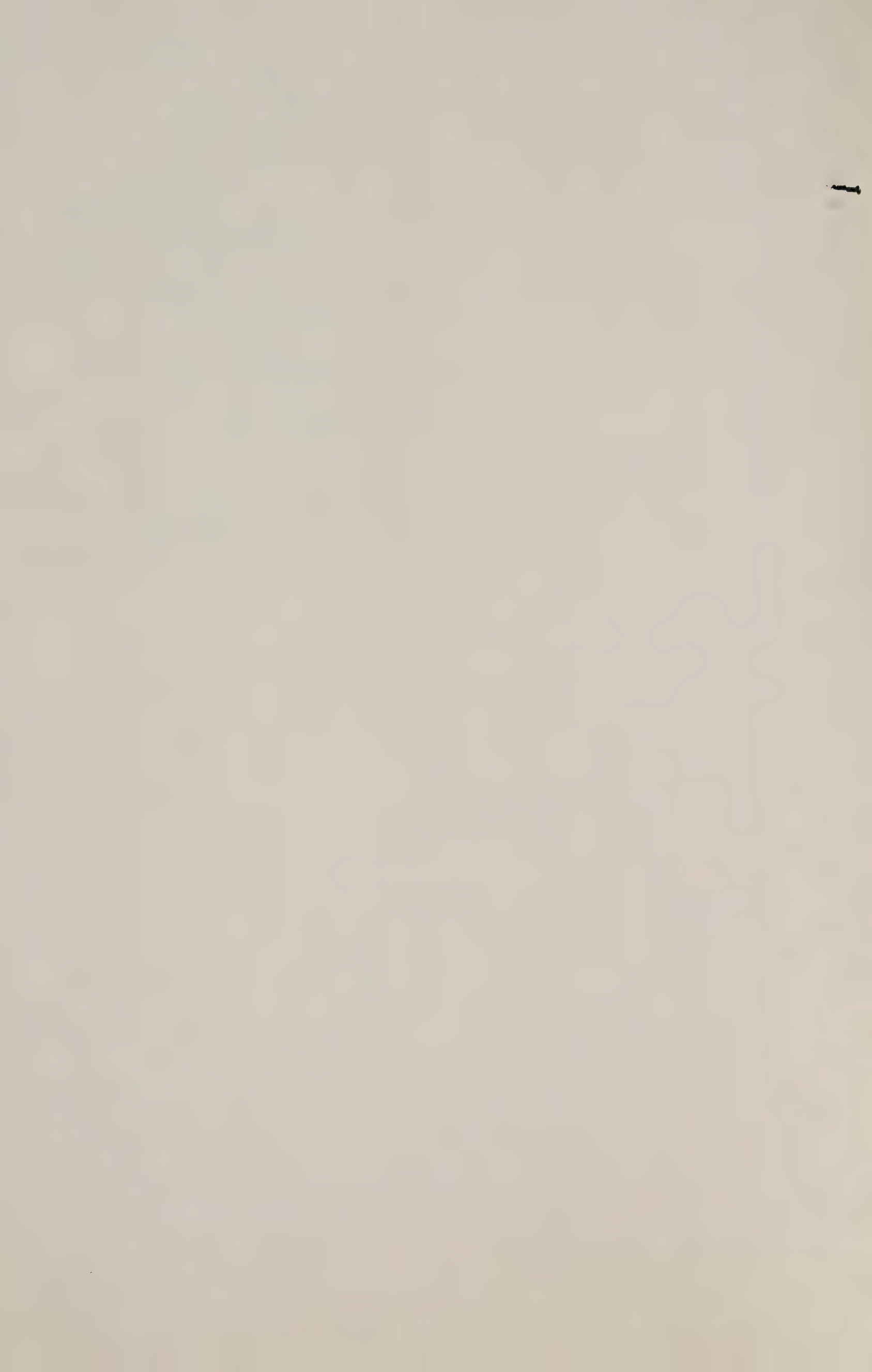
DEFENDANTS' MEMORANDUM TO THE COURT

PRELIMINARY STATEMENT

By an amended motion for further relief and enforcement of decree, plaintiffs have moved the Court to order defendants to equalize per pupil expenditures for each elementary school from regular District appropriations to within 5% of the average per pupil expenditure for all the elementary schools of the District of Columbia. Defendants opposed the amended motion, and, in addition, moved the Court to vacate the decree and dismiss the complaint. Plaintiffs opposed defendants' motion and moved for judgment on the pleadings. In an order filed July 16, 1970, the Court required the defendants to file by August 10, 1970, certain categories of expenditure data for the 1970 fiscal year (the 1969-70 school year) and to advise the Court of defendants' compliance with the Court's opinion calling for compensatory education to de facto segregated schools. Matter responsive to the order of the Court was filed on August 10 and August 12, 1970 in the form of an affidavit and a supplemental affidavit of Benjamin J. Henley, Acting Superintendent of Schools, and three volumes of exhibits.

Mr. Henley identifies thirteen (13) major variables affecting per pupil expenditure:

1. School size
2. Over and under capacity
3. Pupil teacher ratios
4. Special classes
5. Salaries and benefits of officers



6. Salaries and benefits of teachers
7. Salaries and benefits of para professionals.
8. Salaries and benefits of custodians
9. Fixed building costs
10. Repair and maintenance costs
11. Vandalism and theft
12. Population shifts
13. Textbooks and supplies

Mr. Henley points out that the top five (5) schools identified by plaintiffs in their amended motion as high per capita expenditure schools were all inner-city schools. He demonstrates why any elementary school regardless of the economic group it serves might be a high per capita expenditure school.

In an order filed August 12, 1970 the Court sua sponte required defendants to develop and to file with the Court certain tables displaying family income and per pupil expenditures for fiscal 1970 and "a calculation of the statistical correlation between deviations from mean per pupil expenditure out of regular funds and deviations from mean 1959 median family income." The statistical correlation between the fiscal 1970 per pupil expenditure and 1959 median family income is - 0.08. No statistical relationship at all exists; the rank distribution is completely random!

Plaintiffs moved for the production of "additional information" which motion defendants opposed. By order filed August 31, 1970. the Court granted plaintiffs' motion in part, denied it in part, and established a schedule for memoranda responding to exhibits previously filed and to be filed by the defendants.

The following day, September 1, 1970, the Court filed an order in the nature of a show cause order requiring defendants to indicate by memorandum

"\* \* \* why busing of pupils from low-income area, overwhelmingly black, overcrowded schools in the District to high-income area, whiter and underpopulated schools would not eliminate unnecessary differences in per-pupil expenditures relating to over- and under-crowding, which defendants concede to be one of the causes of the lingering and spectacular inequality in overall per-pupil expenditures.





and

*Should not copy*

"\* \* \* why the school board should not devise a plan to equalize within a five per cent variation expenditures for teaching costs out of regular funds among all District of Columbia elementary schools for the 1971 fiscal year."

Pursuant to the order of August 31, 1970, defendants filed enrollment - capacity data and racial data for each elementary school as of September 21, 1970. In other respects, pursuant to defendants' motion, the Court amended its orders of August 31 and September 1, 1970 to require further exhibits on November 2, 1970, and a show cause memorandum by defendants relating to overcrowding and teaching costs on November 16, 1970. Plaintiffs are permitted to file a memorandum responding to defendants' exhibits by November 30, 1970. Defendants are permitted to respond to plaintiffs' memorandum on or before December 10, 1970.

Defendants filed certain exhibits on November 2, 1970 dealing with teaching status, race, and experience, actual per pupil costs for teacher expenditures for fiscal 1970, and projected per pupil costs for teacher expenditures for fiscal 1971. Defendants submitted revised editions of some exhibits on November 6, 1970 to correct certain figures.

The following memorandum is respectfully submitted to the Court in response to its order of September 1, 1970.





OVERCROWDING IS NO LONGER AN OBSTACLE TO THE  
DEFENDANTS' STATED POLICY OF PROVIDING EQUAL  
EDUCATIONAL OPPORTUNITY IN THE DISTRICT OF  
COLUMBIA PUBLIC SCHOOLS

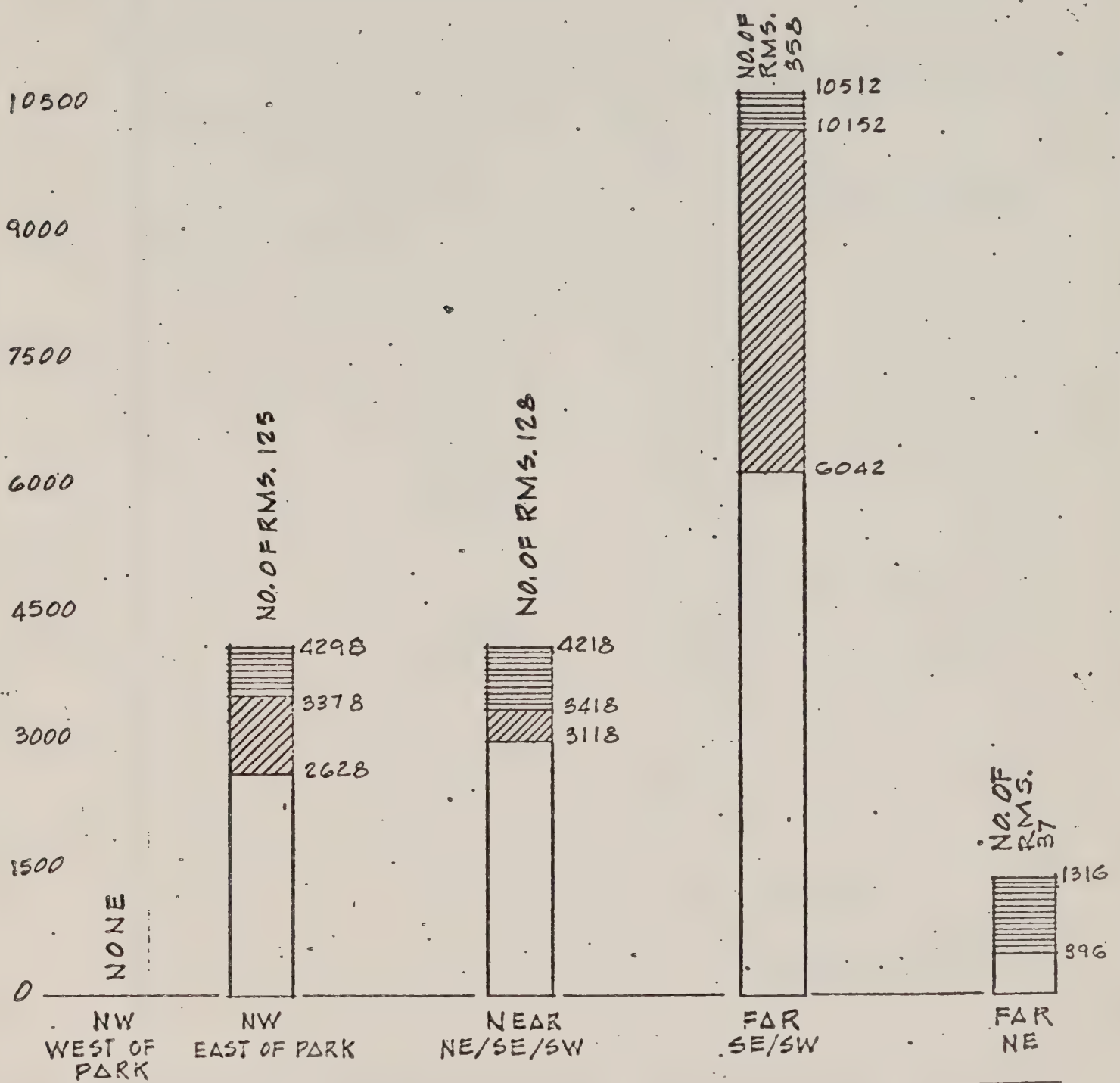
Directing the Court's attention to that portion of its order of September 1, 1970 wherein the defendants were directed to show cause why the busing of pupils from overcrowded schools to underpopulated schools would not eliminate unnecessary differences in per-pupil expenditures relating to over- and undercrowding, at the outset it seems appropriate to explain the criterion used in determining capacity ratios. For regular classes the standard of thirty students to one teacher per classroom is used for determining a building's capacity.

In its opinion of June 19, 1967, the Court found that of 131 elementary schools in the District of Columbia, only 40 were at or under 100% capacity whereas 91 were over 100% capacity. Hobson v. Hansen 269 F. Supp. 401, 433 (1967). By contrast, pupil enrollments as of September 21, 1970 clearly show that overcrowding at the elementary school level has been all but eliminated.

The most important factor leading to the elimination of overcrowding has been the Capital Outlay Program. An examination of the new construction which has taken place in the school system since the opening of schools in 1968 shows that the Board of Education's stated commitment to construct schools in the far southeast and far northeast, the areas of greatest overcrowding, has dramatically resolved the overcrowding problem.

The following graph clearly shows that new construction priorities have been accorded to the most severely overcrowded areas:





☐ PERMANENT SEATS    ☐ RELOCATABLE-PRE-KINDERGARTEN  
☒ TEMPORARY

ELEMENTARY SCHOOL CONSTRUCTION PERMANENT & DEMOUNTABLE  
1968-1970



Three years ago, at the 30 to 1 ratio, there was a shortage of about 5,500 seats. This fall, using the same standard of 30 students to a classroom and including seats in demountables, there is a surplus of 19,193 seats. By effective utilization of this additional space, the defendants have succeeded in reducing the citywide average pupil-teacher ratio to 20.9-1.

Another factor causing a reduction in overcrowding is the decrease in enrollment in the elementary schools.

The following chart shows the overall decrease in past and present enrollment:

#### ELEMENTARY SCHOOL ENROLLMENT

1960-61	80,805
1961-62	83,733
1962-63	86,147
1963-64	87,792
1964-65	89,719
1965-66	92,665
1966-67	94,250
1967-68	95,353
1968-69	94,378
1969-70	93,270
1970-71	91,361 (Projected)
	89,988 (Actual enrollment as of October 22, 1970)

The projected elementary school enrollment for the foreseeable future indicates that the downward trend in elementary school enrollment will continue. Projections for the enrollment of students in the schools for the coming year are made annually with the October enrollment used as a base upon which projections are made. When the fiscal year 1972 budget was prepared, the projected membership in the elementary schools was as follows:

FY 72	90,147
FY 73	86,545
FY 74	81,834
FY 75	80,322





In light of the fact that 1971-72 enrollment in the elementary schools is lower than that previously projected, all of the above figures concerning projects will probably be revised downward.

It should be noted that the actual decrease in enrollment has not been consistent throughout the city. The area east of the Anacostia River continues to show an increase in enrollment, but this increase is much less than in past years. The capital outlay projects proposed in the fiscal 1972 budget and projects presently funded will in the foreseeable future resolve the overcrowding problem in the city and remove entirely the need for busing even under the present volunteer system.

Because overcrowding is no longer a significant problem and seats are available, certain schools which because of their size are not efficient to operate have been or may be closed for regular school programs. For example, the Grant has been closed as a regular school. Students who would have attended Grant are now attending Sumner and Stevens, both of which remain significantly undercapacity. A study has been made to determine the feasibility of consolidating the Fillmore, Jackson and Hyde into the Fillmore and Hyde and converting the Jackson into either an area headquarters, a media center, or special education center. A final decision as to which course the defendants will take will be made after the Court rules on the first part of its show cause order. The study does indicate, however, that if this proposal is adopted both Fillmore and Hyde will be under the 30 to 1 capacity ratio.

The following narrative, which reflects the school system's program to relieve overcrowding in those elementary schools which were classified as overcapacity on September 21, 1970, gives good examples of how continuing progress is being made towards complete



elimination of overcrowding in all public schools in the District of Columbia:

DAVIS

With the opening of the new Weatherless School late in October 1970 the enrollment of the Davis was reduced from 1496 to 1211. The Davis has a 100% capacity ratio of 1376, therefore, is now an undercapacity school.

GARFIELD

The overcapacity of 211 students at the Garfield which has a capacity of 900 is eased somewhat by housing 83 students in the East Washington Baptist Church. In addition to these students who are bussed to this nearby church, 43 students are bussed to the Stanton School. The students bussed to the Stanton are not reflected in the Garfield enrollment.

With the opening of the addition to the Turner and the transfer of two classes back to the Ketcham from the Stanton, additional seats are available in the Turner and Stanton, two schools immediately adjacent to the Garfield. (See 1970 map filed herein) The school administration proposes to go to the Garfield school patrons to ask them to set up a community group to redraw the Garfield school boundaries or to recommend the transfer of certain classes to the Stanton and Turner Schools.

HENDLEY

The overcapacity at Hendley does not include students being bussed to the following schools: 84 Blow, 25 Nichols Avenue, 39 Janney.

The school administration has under consideration the transfer of classes from the Hendley to the adjacent Leckie and Patterson schools (see 1970 map filed herein) because both of these schools have space enough to relieve the overcrowding at Hendley. Before making such a transfer, the administration intends to involve the Hendley community in the process.





Preliminary information reveals that parents in the Hendley community are opposed to the transfer of some of their children to Leckie and Patterson because those children would be required to travel across Oxen Run. As the Court was apprised through the testimony of Mr. James Talbert, Director, Elementary Administration, at a hearing on August 28, 1970, it is the policy of the Board of Education to invite an effected community to comment on proposed boundary and student transfer plans. However, the Board is aware that the ultimate responsibility for such determinations rests solely with it, therefore, would be required to reject the recommendation of the affected community if it felt that that recommendation would not promote a sound educational program for the students affected.

In this regard, it should be noted that in the event the Board decides to implement this transfer plan, the cause of action instituted by Intervenor Elizabeth A. Budd, et al., might be rendered moot.

#### KETCHAM

The Ketcham has an annex which has a capacity of 240 students. The main building was renovated this past summer and now has a new capacity of 540. A 16-room addition with a capacity of 336 students will open in January 1971. The total of these three facilities gives a capacity of 1,116.

The October 22 enrollment was 1251.

At the present time students from the Ketcham are dispursed in the following manner to relieve overcrowding: 127 students are being bussed to four demountable classrooms at Congress Heights, 193 to demountables at 16th and Butler Streets, S. E. which is five blocks from Ketcham (see 1970 map filed herein), and 50 to the Wheatley School.

Although the building will still be over capacity as of January 1971 relief will be had by continuing to use a portion of the demountable at 16th and Butler Streets, S. E., and by continuing to bus 50 students to the Wheatley School.





#### KIMBALL

The overcrowding at Kimball was reduced with the opening of the Weatherless School. This building with a capacity of 1056 was reduced in enrollment from 1439 to 1077. This minimal overcrowding is considered to be insignificant in light of the large size of the Kimball.

#### MOTEN

The addition of demountables at 16th and Butler which are presently shared with pupils from Ketcham have offered some relief to this school. With the opening of the Ketcham addition in January, 1971 still further relief will be achieved. When the new addition which housed 522 students is completed in January 1972 the problem of overcrowding will be resolved.

#### ORR

A new 32-room replacement for this old 10-room building is presently under construction. The new plant will be available some time during the next academic year. Presently there are 105 students from the Orr being bussed to undercapacity schools. These students are not counted in the Orr enrollment. The overcapacity of 19 students is not considered significant as a practical matter.

#### RANDLE HIGHLANDS

The opening of the new addition which is designed to house 225 students increased the capacity to 525 and has eased this overcrowded situation. The October 22nd enrollment at Randall Highlands was 570 pupils with two classes totalling 64 pupils in the Ryland Methodist Church and 6 classes totalling 163 students in the Pennsylvania Avenue Baptist Church. We propose to continue to use one of these churches, most likely the Pennsylvania Avenue Baptist Church, as it is the closer of the two, to relieve this slight overcrowding. With the opening of the new Orr late next year there will be a boundary change which will eliminate the necessity of relying on the use of the churches to relieve overcrowding.



#### SAVOY

This school which has a capacity ratio of 1056 students and a capacity ratio of 104% (1100 actual enrollment), is not as a practical matter considered overcrowded because of the large size of the school; therefore there are no present plans to create additional space in this school.

#### SMOTHERS

The school administration proposes to move two demountable classrooms from the Congress Heights complex to relieve this overcrowding. This move will take place after the students from Ketcham, now temporarily housed in these demountables, are moved back to Ketcham when the new addition opens in January, 1971.

#### TAKOMA

There is in the planning stage a proposed building which will replace the present building. The school administration is seeking from Congress the authority to redirect appropriated funds to cover the cost of an architect to design this new building. If the people in the community had been willing to accept the design of the school plant for which funds had been appropriated, construction would already have started and the minor overcrowding would have been resolved during the next school year. A two-room demountable will be moved to Congress Heights to assist in relieving this overcrowding. This will take place sometime after January, 1971.

#### TURNER

The newly-opened 17-classroom addition has enabled the school administration to move classes out of the auditorium into regular classrooms and to reduce class size. This increases the school's capacity from 720 to 1,336.

#### WEST

The minor overcrowding at the West is not serious enough to warrant a major shift. Sometime during this school year the musical instrument storage and repair room will be relocated, thus adding a classroom to this building relieving this minor overcrowding.





In addition, the October 22, 1970 enrollment count reflects that three schools which were just under 100% capacity as of September 21, 1970 are now slightly overcapacity: Bancroft, which has a capacity of 900 students now has an enrollment of 915; Whittier, which has a capacity of 1158-students, now has an enrollment of 1162; and Congress Heights which has a capacity of 1,076 and an enrollment of 1,080. These increases are considered insignificant as a practical matter.

The additional bussing of pupils from overcrowded schools to undercrowded schools would obviously relieve whatever overcrowding still exists; but would not, as suggested by the Court, result in eliminating "inequality" in overall per-pupil expenditures.

The Board's experience with voluntary bussing to reduce overcrowding has been far from satisfactory and in many ways has been quite burdensome.

Mr. Emmett S. Hill, Jr., School Services Officer, Department of Business Administration, estimates that this year it is going to cost \$1.90 per day (\$342 per year) to transport a child to and from school on school-operated and owned buses.

Last year the schools bussed an average of 1,722 students a day from overcrowded to undercrowded schools. Contracts with D. C. Transit and WMA called for the use of 40 buses ranging in cost from \$40 to \$60 per run with a total cost of \$285,858.93 for the rental of buses. In addition, a bus aide was hired to meet the children at the sending school and accompany them on the bus to the receiving school. This aide remained with the children all day, working as a teacher's aide, and supervised the children on the bus when they returned home at the end of the day. These aides, 42 in number, received a salary including fringe benefits of \$2.56 per hour. This cost is reflected in the \$1.90 per-pupil, per day bussing expenditure.

The number of students being bussed this year is 1,520, down about 200 from the 1,722 of last year.

In an effort to encourage the parents of students in overcrowded schools to participate in the voluntary bussing program, the school administration sent out memoranda to school principals directing them





to apprise parents of the opportunity for their children to attend schools west of Rock Creek Park. In addition, at the Assistant Superintendents' meetings with principals, both Dr. Dorothy Johnson, Assistant Superintendent of Elementary Schools, and Mr. William Rice, Assistant Superintendent of the Anacostia Project, discussed this matter. As a result, in the Anacostia Project and other overcrowded schools, letters were sent to parents' homes calling their attention to available seats west of the Park.

For a number of reasons the volunteer bussing program this year has not been as successful as in the past. Many parents who voluntarily allowed their children to be bussed last year are not willing to continue to participate in the program this year. The reasons given by the parents to school personnel are:

1. The child does not want to spend the long time it takes the bus to go across town and back
2. The child does not want to leave his neighborhood because he misses his friends.
3. The child has to get up too early to catch the bus.
4. The educational program is not that much better in the receiving school.
5. The child loses a day from school if he misses the bus.
6. The bus service is erratic with frequent delays both in coming and going to school.
7. The school day is curtailed because of tardiness in the arrival of the bus.
8. Some parents are concerned about a child's personal illness in a school located such a distance from his home.



9. Some children experience great fatigue.

When all goes well a student from the far southeast being bussed to a school across Rock Creek Park spends an hour riding the bus. Bad weather, traffic jams and other emergencies lengthen the time a child spends on a bus. This unproductive hour that the child spends passively riding the bus has disturbed the administration to the point that it is exploring the possibility of installing closed circuit TV or movie projectors on a few buses to fill this wasted period with some worthwhile educational program.

Given the defendants' experience in this matter, it can fairly be said that the problems which have been raised by the volunteer bussing program add further weight to the Court's own opinion that

"[n]eighborhood elementary schools have undeniable advantages. Neither school nor parents need bear any transportation expenses, since the school is within walking distance from home. For the same reason the safety hazards and the expense of time involved in getting from home to school are held at a minimum; also students may conveniently return home for lunch, and, with no school bus to catch, may linger after school with school work or after-school activities. Locating school within the neighborhoods facilitates a closer relationship between school and parents, and gives the student a chance to make friends during the school day with the children of his own age who live near his home.

\* \* \*" Hobson v. Hansen, supra, 269 F. Supp. at 409.





An alternative to further bussing to relieve the limited overcrowding which still exists is the construction of additional temporary classrooms. The defendants recognize the calculated risk which is taken when a demountable building is placed on a school site. The risk being that since the child has a temporary seat in a classroom, construction of new permanent building can, for the present at least, be deferred. However, when one compares the cost of a demountable building with that of bussing students to relieve overcrowding, the economics of constructing a demountable takes on a new dimension.

The money spent for bussing, once the child is bussed, is totally lost. Admittedly, the bussed child helps to fill up an already existing building, helps adjust or equalize class size in the receiving school as well as the sending school, and the child may get a better education because he is in a smaller class. However, is this the wisest way to spend one's already too limited resources, particularly if the same objectives can be achieved with less disruption of the child's normal life and with less cost over a period of time?

A demountable classroom housing 30 pupils costs \$33,000 per classroom unit if toilets and site improvements are in place. It costs approximately \$10,000 per year to bus 30 students. One would have to bus students for only three and one half years before the cost of that bussing would equalize the cost of a demountable.

Stated another way:

1. Conservatively estimated, a demountable classroom has a useful life of ten years. When this cost is pro-rated over this period the annual cost is \$3,300 as compared to the \$10,260 cost for bussing the same thirty students.

2. A demountable unit with a toilet may be moved for \$10,000, thus making it possible for the school system to use it on another site.





3. Pupils, teachers and parents enthusiastically endorse the use of demountables to relieve overcrowding. See the attached article written by Mr. Lawrence Feinberg in the Washington Post.

The efforts of the defendants to reduce overcrowding and to distribute educational resources without racial or socio-economic discrimination is demonstrated further by the fact that as of October 22, 1970, the pupil teacher ratio throughout the city was 20.9 for the city as a whole; 19.0 for the Model School Division (the Title I area of the city); and 18.3 for those elementary schools west of Rock Creek Park. Only two schools, the Garfield and the Hendley, have pupil-teacher ratios in excess of 25-1 and remedial action to be taken has already been discussed. No school has a pupil-teacher ratio in excess of 27.7 to 1.

These figures are not based upon building capacity ratios, heretofore discussed, but upon the actual number of students and instructional staff in each elementary school on October 22, 1970.



DEFENDANTS SHOULD NOT BE REQUIRED TO DEVISE A PLAN TO EQUALIZE  
EXPENDITURES FOR TEACHING COSTS OUT OF REGULAR FUNDS

" \* \* \* it is ORDERED that \* \* \* defendants indicate by memorandum filed in the record in this case, why the school board should not devise a plan to equalize within a five per cent variation expenditures for teaching costs out of regular funds among all District of Columbia schools for the 1971 fiscal year."

Defendants deny that they have violated the decree of this Court issued June 19, 1967. Therefore, defendants are opposed to any order of the Court requiring them to equalize within a five per cent variation--or within any percent variation--expenditures for teaching costs out of regular funds among all District of Columbia elementary schools.



Plaintiffs argue that substantial per pupil expenditure differences evidence discriminatory practices. Throughout these proceedings, and most recently in the affidavits of Benjamin J. Henley filed with the Court on August 10, and August 12, 1970, defendants have pressed upon the Court the theme that there are equally plausible explanations for expenditure differences and that plaintiffs have not met their burden of proof.

The Court cannot but be mindful of its own words written in the Hobson opinion:

" \* \* \* If a valid purpose is in fact joined by an outright segregatory purpose, the court has no doubt that a de jure case has been established. On this issue, however, the burden of proof returns to plaintiffs; school board officials, having demonstrated their legitimate intentions, can hardly be asked or expected to prove the nonexistence of a secret illicit accompanying intent." 269 F. Supp. at 418.

One such equally plausible explanation for expenditure differences is economy of scale. In any business - and these defendants are in the business of education - there are inherent economies of scale. Hence, the development in recent times of industry, commerce, agriculture, and finance into large units.

The attention of the Court is directed to an article by June O'Neill and Arlene Holen, published in the Washington Post on October 15, 1970, which is attached to this memorandum. Defendants do not offer the article as evidence. Defendants, however, do offer the article as argument and adopt the reasoning contained in the article and incorporate it in this memorandum by reference. The article points out:

"Large schools have relatively low expenditures per pupil and small schools have higher expenditures. This is just what would be predicted by the time-honored principle of economies of scale, which describes the general tendency of costs per unit of output--in this case, one child's education--to fall as the scale of operation--in this case, the size of school--increases.





"Schools west of the park are smaller, 305 pupils per school on the average. Schools east of the park are newer and larger, 744 pupils per school on the average. The principle of economies of scale then, would lead one to expect higher expenditures west of the park where the schools are so much smaller. Such a differential need not reflect discriminatory practices.

"An appropriate comparison is made in the accompanying chart. When schools of equal size are compared, it is clear there are no significant east-west differences. If anything, schools of the same size east of Rock Creek have somewhat higher per-pupil expenditures than their western counterparts. The figures used here are D. C. expenditures only, and do not include federal Title I or impacted area funds.

"It is also striking that expenditures per pupil consistently decrease as the size of school increases. And this happens on both sides of the park.

"The reason for this phenomenon of declining costs, which is widely recognized in industry, is the greater spreading out of high fixed costs over more pupils in the larger schools. For example, school principals get similar salaries, but in larger schools the principal's salary cost per pupil will be much lower. This greater spreading out of costs applies to all those items in the school budget which cannot be provided in direct proportion to the number of pupils--administrative costs, buildings and maintenance costs, library, special teacher, guidance services, etc."

In the show cause order filed September 1, 1970, and amended by an order filed September 21, 1970, the Court found that a prima facie violation of the Court's decree was made by the fact that:

"\* \* \* The area west of the Park is the richest in the District. The elementary school population of that area is also the whitest in the city. Yet in the 1970 fiscal year, the elementary schools west of the Park had an average per-pupil expenditure of \$753.61\* out of regular funds while the city-wide average was \$585.82--a difference of approximately 29 per cent. Thus it appears to the Court that the richest and whitest area of the city is being substantially favored over poorer and blacker areas. A prima facie case of violation of the 1967 decree seems to have been made out." (Court's footnotes omitted).

The Court must keep in mind that there are substantial differences in per pupil expenditures existing in approximately 140 elementary schools. Consequently, it is possible for anyone to cull a small atypical grouping

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\* The true average of expenditures for pupils attending elementary schools west of Rock Creek Park is \$713, not \$754 as the Court suggests. The average given by the Court is obtained by adding the expenditure per pupil for the 13 schools west of the Park and dividing the total dollar figure by 13 without regard to the number of pupils enrolled in each school. Such a calculation gives equal weight to schools of different sizes. It is contrary to the way in which the city-wide average expenditure per pupil was obtained and with which it is being compared. The city-wide average of \$586 per child is arrived at by dividing the total operating expenditures from regular District funds by the average daily membership in the elementary schools of the District of Columbia for fiscal 1970.



of elementary schools which yields an average per pupil expenditure substantially different from the city-wide average. This is not surprising. The public school system of the District of Columbia is an organic school system. It has an existing physical plant of school buildings of varying size and ages to which is being added new schools, additions to present schools, and replacements of obsolete buildings. It serves a large pupil population that is first growing in number, then decreasing in number in one part of the city or another, and that is never uniformly spread over the entire city. It fills new teaching positions and positions made vacant by retirements or resignations. In short, it is a school system that is trying to meet the daily changing demands of nearly 90,000 elementary school pupils rather than trying to achieve some artificial meaningless symmetry of expenditure figures.

For example, another high expenditure atypical group of elementary schools is contained in the Model School Division. The Model School Division is an educational subsystem of the D. C. Public School System. It was established in 1964. The boundaries of the Division approximate the service boundaries of Cardozo High School. The Division consists of 16 elementary schools (including Tubman), 4 junior high schools and one senior high school, Cardozo. Every school in the division has an overwhelmingly black enrollment.

All Title I money received by the District of Columbia under the Elementary and Secondary Education Act is applied to the Model School Division. Eight of the sixteen elementary schools, 2 of the 4 junior high schools (Garnet-Patterson and Shaw.), and the senior high school, Cardozo, receive Title I funds. By definition of the Elementary and Secondary Education Act, the schools in the Model School Division serve the lowest income group of pupils in the District of Columbia.





MODEL SCHOOL DIVISION OCTOBER, 1969

1969-70 Total Expenditures from Regular Appropriations

ADM		Per Pupil Expenditure	Total Expenditure
936.1	Bancroft	\$ 528.12	\$ 494,373.27
464.3	Bruce	720.04	344,316.05
186.3	Bundy	2,023.77	377,029.23
346.7	Cleveland	806.30	279,545.51
954.1	Cooke, H.D.	587.24	560,281.75
925.3	Garrison	653.61	604,788.71
422.5	Grimke	1,000.00	422,500.12
473.6	Harrison	789.13	373,734.07
1,079.1	Meyer	695.36	750,288.24
600.5	Monroe	619.57	373,053.88
637.2	Montgomery	609.61	378,806.93
225.0	Morse	586.48	131,956.99
928.8	Park View	564.27	524,092.66
984.8	Raymond	608.62	599,370.35
606.7	Seaton	668.05	405,303.85
9,771.0		\$ 11,460.17	\$6,618,441.61

\*Average of average: \$11,460.17 divided by 15 = \$764.01

\*True average: \$6,618,441.61 divided by 9771.0 = \$677.36

Citywide average: \$585.82

\*The Tubman opened January 21, 1970. If the partial year at Tubman were included, these figures would be somewhat lower.

It is respectfully submitted that the Court errs when it considers the 13 elementary schools west of Rock Creek Park to be a monolith of white and rich pupils. The Court's decree has worked substantial changes in the character of these elementary schools.

The Court is aware that pupils from overcrowded schools are being bussed to under-utilized schools east and west of Rock Creek Park. These receiving schools are no longer neighborhood schools, for they no longer serve pupils within one or two contiguous tracts. They are schools with proximate and distant sources of pupils from different census tracts. When pupils are bussed to a receiving school east of Rock Creek Park, the income levels of the several census tracts are the same or are not substantially different. However, when pupils are bussed to receiving schools west of Rock Creek Park, the income levels are substantially different, producing socio-economic integration. To account for this, especially in light of the allegations of invidious discrimination favoring the schools west of Rock Creek Park, defendants have adjusted the 1959 median family income levels as follows:





1959 Median Family Income Adjusted for Schools  
Receiving Students from Neighborhood of Different  
Income Levels.

Name of Receiving School	Total Enrollment September 21, 1971	Percent of Total Pupils Bussed-In from:				1959 Income Level	*1959 Income Level Adjusted
		Moten	Draper	Turner	Hendley		
Murch	598			3		\$10,374	\$10,219
Janney	377		11		10	11,096	9,965
Hardy	166		47			13,756	9,688
Hyde	122		37			9,780	8,099
Mann	182		24			13,756	11,712
Eaton	375			11		11,582	10,881
Hearst	219			20		11,582	10,308
Key	183		37			14,269	10,876
Fillmore	134	49				9,780	7,544
Jackson	95	70				11,384	7,067

\*Adjusted income is calculated by taking a weighted average of the 1959 median family income of the receiving schools and the 1959 median family income of the sending school(s) where the weights are the proportion of children living in the receiving school's neighborhood and the proportion of children living in the sending school's neighborhood(s). For example, if a receiving school with a total enrollment of 400 pupils were in a neighborhood with a 1959 median family income level of \$10,000 by was receiving 100 pupils by bus from an overcrowded school in a neighborhood with a 1959 median family income level of \$5,000, the 1959 median income level for the receiving school is adjusted to \$8,750, or \$10,000 plus \$10,000 plus \$5,000 divided by 4.

Bussing of pupils from overcrowded schools to under-utilized schools west of Rock Creek Park has changed not only the economic composition of the schools but the racial composition of the receiving schools as well. This is evident in membership figures of September 21, 1970, filed with the Court on October 2, 1970. For example, Jackson has a 96% Black enrollment; Hyde has a 52% Black enrollment; Fillmore has a 46% Black enrollment; Hardy has a 50% Black enrollment; Key has a 37% Black enrollment. The Court can see from the revised submission of the defendants of November 6, 1970, that all of these schools are above the projected average teacher expenditure per pupil of \$499 for fiscal 1971.

On the other hand, Lafayette is a fully utilized school west of Rock Creek Park which consequently receives no bussed pupils. Only 6% of the enrollment of Lafayette is Black. It is in a 1959 census tract with an income level of \$13,324. Yet the projected teacher average. Compared with the other elementary schools west of the Park, Lafayette is a large school with a capacity of 690 pupils.



The Defendants must here again emphasize that it is not the blackness or whiteness of the school, nor the poorness or richness of the school that causes a high or low per pupil expenditure figure. It is the size of the school. It is only in a school of substantial size that classes of sufficient size may be organized. When a principal of a small school has only 34 - 5th grade pupils, for example, she must organize the pupils into two classes with a consequent ratio of 17-1. A single class of 34 pupils to one teacher would be unfair and educationally unsound, for it would exceed both the capacity-based ratio of 30-1 and the citywide average pupil-teacher ratio of approximately 20.9-1 on October 22, 1970.

On August 31, 1970, the Court ordered defendants to file:

"Any data from the 1970 census which will indicate the median family income for the neighborhood of each public elementary school in the District of Columbia."

The Court is advised that this 1970 census data is not now available. Defendants recommend to the Court an alternative means of obtaining equivalent information. Currently, the best available method of identifying the presence of low-income pupils in the elementary schools of the District of Columbia is through the information on the number of pupils who qualify for free lunches in each school. This measure may be superior to the data on family income in the census tract of the school for 1959 because it is more timely and because it depicts the income of the families of the pupils attending the school rather than the income of the school's neighborhood at large.

A copy of the income standard to qualify and related matter is included here for the information of the Court.





September 1, 1970

## NOTICE

### TO ALL PARENTS OF PUPILS ATTENDING D.C. PUBLIC SCHOOLS:

The D.C. Public Schools provide free lunches to all needy pupils attending any school in the system.

### NEEDY PUPILS ARE THOSE FROM FAMILIES:

a. Who receive or are entitled to receive public assistance from any federal or local source such as Public Welfare, Food Stamp Program, etc.

b. With family size and income of:

<u>FAMILY SIZE</u>	<u>INCOME</u>	<u>FAMILY SIZE</u>	<u>INCOME</u>
One	\$2,400	Five	\$5,340
Two	3,150	Six	6,025
Three	3,900	Seven	6,650
Four	4,650	Eight	7,275

Add \$560.00 for any additional member.

c. Who because of other reasons are unable to pay the cost of the lunch. Detailed justification shall be required in the application.

### HOW TO APPLY:

Application blanks for free lunches are available in the Principal's office of each school. Parents who feel their children may be eligible for free lunch are urged to apply.

### FAIR TREATMENT OF ALL CHILDREN:

a. Children who receive free lunch are to be treated in the same manner as paying pupils. No child may be made, as a condition to receiving a free meal, to:

- (1) Use a separate lunchroom.
- (2) Go through a separate serving line.
- (3) Enter the lunchroom through a separate entrance.
- (4) Eat lunch at a different time from paying children.
- (5) Work for their meal.
- (6) Use a different medium of exchange in the lunchroom than paying children use.
- (7) Eat a different meal than paying children.

b. If someone is treated unfairly in the Lunch Program, a letter telling all about it should be sent to the Superintendent of Schools.

### SCHOOL BREAKFAST PROGRAM:

A Breakfast Program is offered in over one hundred schools. The Breakfast Program is not in all schools. The program is in schools with large numbers of needy pupils. Any pupil eligible for the free lunch program is also eligible for the free breakfast program.

### PRICE OF LUNCHES:

Pupils not eligible for free or reduced price lunches may purchase lunch in all schools having cafeteria facilities. The current pupil prices for lunches are:

Elementary Schools:	Single Lunch	\$ .25
	Weekly Lunch Ticket (5 meals)	1.15
Secondary:	Single Lunch	\$ .30
	Weekly Lunch Ticket (5 meals)	1.35
ADULT PRICES:	\$ .50 per lunch.	

(USE APPLICATION ON REVERSE SIDE.)





The Court will notice that a pupil in a family of four persons with a family income of \$4,650 or less is eligible to receive a free lunch in any public school in the District of Columbia. A free breakfast program with the same eligibility standards is available in over 100 public schools.

A list of elementary schools and the number of pupils participating in the free lunch program is included herein for the information of the Court.

#### NEEDY LUNCH CHILDREN BY SCHOOL, OCTOBER 21, 1970

Adams	298	Madison	196
Aiton	560	Mann	17
Amidon	379	Maury	123
Bancroft	305	Merritt	220
Barnard	72	McGogney	520
Beers	83	McGogney Annex	300
Benning & Annex	123	Meyer	500
Birney & Annex	621	Military Road	47
Blair-Ludlow-Taylor	897	Miner	579
Blow	260	Monroe	220
Bowen	355	Montgomery	300
Brent	130	Morgan	323
Brightwood	61	Morgan Annex	180
Brookland	76	Morse	166
Bruce	227	Moten	175
Bryan	282	Mott	292
Buchanan	243	Murch	10
Bundy	199	Nalle	425
Bunker Hill	38	Nichols Avenue	30
Burroughs	120	Noyes	216
Burrville	179	Orr	110
Carver	117	Oyster	14
Clark	130	Parkview	443
Cleveland	237	Patterson	128
Congress Hts. & Annex	240	Payne	289
Cook, J.F.	385	Peabody	156
Cooke, H.D.	304	Perry	100
Crummell & Annex	253	Petworth	64
Davis & Annex	350	Plummer	333
Draper	375	Powell & Annex	69
Drew	515	Randle Highlands	57
Eaton	27	Raymond	338
Eckington	113	Richardson	501
Edmonds	110	River Terrace	54
Emery	530	Rudolph	152
Fillmore	17	Savoy	692
Gage	68	Seaton	413
Garfield	196	Shadd	556
Garrison	557	Shepherd	4
Gibbs	370	Simmons	400
Giddings	315	Simon	335
Goding	530	Slater	
Greene	480	Slowe	227
Grimke	339	Smother	137
Hardy	12	Stanton & Annex	840
Harris	520	Stevens	180



Harrison	330	Stoddert	2
Hearst	17	Sumner	90
Hendley & Annex	565	Syphax	382
Houston	438	Takoma	56
Hyde	15	Thomas	338
Jackson	19	Thomson	225
Janney	16	Truesdell	300
Keene	1	Tubman	405
Kenilworth	716	Turner	470
Ketcham & Annex	155	Tyler	443
Key	23	Van Ness	439
Kimball	264	Walker-Jones	510
Kingsman	300	Watkins	492
Lafayette	0	Weatherless	327
Langdon	432	Webb	324
Langston	331	West	72
LaSalle	67	Wheatley	343
Leckie	306.	Whittier	80
Lenox	295	Wilson	512
Lenox Annex	90	Woodridge	91
Lewis	303	Young	234
Logan	409		
Lovejoy	353		
		Total	35,582

October 22, 1970 enrollment	Percent Needy Lunch Children
89,516	39.75

It is interesting to compare the proportion of needy lunch pupils in a school with the adjusted 1959 median family income level of the census tracts served by the school:

NEEDY LUNCH CHILDREN OCTOBER 21, 1970

1959 Median Income per School, Adjusted	Percent of Pupils Receiving Free lunch in School Income Grouping
\$3,000	67
3,000 - \$3,999	63
4,000 - 4,999	49
5,000 - 5,999	40
6,000 - 6,999	26
7,000 - 8,999	17
9,000 +	4

The correlation is remarkable. The lower the adjusted 1959 income level the greater is the proportion of pupils in the school in that income grouping participating in the free lunch program. Accordingly, it appears that participation in free lunch programs is a highly reliable way of identifying the presence of needy pupils in a given school.





The projected average teacher expenditure of fiscal 1971 for the needy lunch pupils is \$508<sup>\*/</sup>, or \$9 above the average expenditure for all elementary school pupils. On the other hand, the average teacher expenditure for fiscal 1971 for the pupils not receiving free lunches is \$494, or \$5 below the average. Here is clear and convincing evidence that teacher expenditures do not favor the higher socio-economic income groups.

If the school system were discriminating against the poor then the average teacher expenditure for needy lunch children should be lower than that for the city as a whole. In fact, the city-wide average teacher expenditures per pupil in the D. C. Elementary Schools is \$499, somewhat lower than the average for the needy lunch students. This comparison strongly suggests that the poor are receiving at least an equal share of teacher expenditures.

If the Court orders equalization within 5% of the city-wide average expenditure, upon a redistribution of resources, it is estimated that approximately 40% of the free lunch pupils, over 13,000 pupils, would "suffer" a withdrawal of educational resources since they are in schools that will fall above the 5% equalization range.

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<sup>\*/</sup> The average teacher expenditure per pupil for fiscal year 1971 for needy children is arrived at by multiplying the average teacher expenditure per pupil of a school by the proportion of needy lunch pupils in that school. The total dollar figure represents the total teacher expenditures for all the needy lunch children in the elementary schools. This dollar figure is divided by the number of needy lunch children in the elementary schools to arrive at an average teacher expenditure per needy lunch pupil for fiscal 1971.





In 1970, by Public Law 91-230, Congress amended the Elementary and Secondary Education Act of 1965 to include the following:

"\*\*\*Federal funds made available under this title will be so used (i) as to supplement and, to the extent practical, increase the level of funds that would, in the absence of such Federal funds, be made available from non-Federal sources for the education of pupils participating in programs and projects assisted under this title, and (ii) in no case, as to supplant such funds from non-Federal sources, and (C) state and local funds will be used in the district of such agency to provide services in project areas which, taken as a whole, are at least comparable to services being provided in areas in such district which are not receiving funds under this title:\*\*\*"

It had come to the attention of the Congress that wide disparities exist between Title I target schools and non-Title I schools in the use of state and local funds and that in many instances, Title I funds were being used to supplant rather than to supplement the use of state and local funds for educational programs.

Pursuant to its administrative responsibility to ensure compliance with the Elementary and Secondary Education Act as amended, the United States Office of Education caused to be circulated on or about September 18, 1970, to all Chief State School Officers, including Benjamin J. Henley, Acting Superintendent of Schools of the District of Columbia, an "Advisory Statement on Development of Policy on Comparability." The Court's attention is directed to an affidavit of Mr. Henley filed with this memorandum wherein he attaches a true and correct copy of the Advisory Statement of the Office of Education.

This Advisory Statement bears directly on the subject of plaintiffs' amended motion now before the Court, that is, comparability of public schools. The basis for determining comparability, however, is significantly different from that prayed for in the amended motion or implied by the Court in its show cause order. In particular, the Advisory Statement:



(1) excludes from comparability instructional salaries paid by reason of longevity (page 2, paragraph 4, page 7, paragraph 4, and page 8, paragraph 2); (2) includes within comparability funds provided under Public Law 81-874 (Impact Aid Funds) and considers such funds the same as state and local funds in determining local expenditure (page 3, footnote 1); (3) recognizes that non-comparability may legitimately exist between small and large elementary schools. (page 8, paragraph 6).

A growing number of studies have attempted to discover those school inputs which influence the quality of the output of schools. The most commonly used measure of output quality has been pupil scores obtained on pupil achievement tests. A major difficulty of all such studies has been that the achievement of students is heavily influenced by the socio-economic status of the parents. This makes it difficult to evaluate the unique influence of various school characteristics. The importance of parent and home factors in influencing pupil achievement has been amply demonstrated by two well known and very large studies, the Coleman Report in the United States and the Plowden Report in England.\*

In evaluating the effect of years of experience of teachers on student achievement, it may be particularly important to control socio-economic status. In most school systems, teachers with seniority are given more choice in the selection of a school than younger teachers. If teachers prefer schools where the socio-economic status of the students is higher, then in estimating the effect of teacher experience on student performance, one runs the risk of really catching the effect of socio-economic status on student performance, unless great caution is exercised in statistically controlling for socio-economic status.

Once socio-economic status is "held constant", years of teacher experience seem to have little or no effect on student achievement. A very detailed study of the effect of school

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\* Coleman, James S., et. al., Equality of Educational Opportunity, (Washington, D. C., U. S. Office of Education; 1966)  
The Plowden Report refers to a report of a committee headed by Lady Plowden. See Children and Their Primary Schools, Report of the Central Advisory Council on Education; (London; Her Majesty's Stationery Office, 1967).





characteristics on student achievement in Michigan divided the students in the survey into ten different levels of socio-economic status.\* Tests were run separately, for each socio-economic status decile. After controlling for several other measures of school characteristics, teacher experience was shown to have no effect in any decile on reading scores or verbal scores of students, and an effect only on the first and third deciles in math scores. It may be further noted that teachers' verbal ability (which is not currently awarded any salary increment in the District) had a significantly positive effect on all three types of test scores and for almost all socio-economic status deciles. Considering the importance of teacher verbal ability, it is of interest that one study by Levin found that teachers with less than three years of experience had the highest verbal ability.\*\* Evidently, verbal ability (and, a fortiori, the talents it is probably a proxy for) is more highly rewarded outside the teaching profession and so the best endowed teachers may not remain. However, Levin concedes that teacher experience may have a small yet positive effect on student achievement, holding teachers' verbal ability constant. Levin's overall conclusion is that the current emphasis on tying salaries to experience is not cost effective. Since teacher experience is not positively correlated with teacher verbal ability, the large sums spent on years of experience reap a small reward.

Other studies have evaluated the effect of pupil-teacher ratios on student performance. Although popular agreement would probably have it that low pupil-teacher ratios are advantageous, test results are ambiguous. The Plowden Report found that high pupil-teacher ratios actually were associated with high student performance. However, the Report commented that it was possible that something unaccounted for (but with a beneficial effect) was

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\* See Schools and Inequality by J. W. Guthrie, G. B., Kleindorfer, H. M. Levin and R. T. Stout, The Urban Coalition, 1969, Table 4.2

\*\* See Henry Levin, "A Cost-Effectiveness Analysis of Teacher Selection" in Journal of Human Resources, Winter 1970.





correlated with high pupil-teacher ratios and that this was causing the association. A study by Raymond\* found no evidence of a significant relationship between quality and the pupil-teacher ratio.

The defendants have repeatedly urged to the Court, and take this opportunity again, in light of the Advisory Statement of the Office of Education, to urge that teacher expenditures which are based upon longevity of service are a completely irrelevant standard for comparing educational opportunity. The record in this case is devoid of evidence to substantiate any court order that would compel equalization of per pupil expenditures for instructional salaries which includes an increment for longevity of service.

If equalization is ordered, impact aid funds and regular appropriations should be within the scope of the order. As was demonstrated at pp. 2-5 of defendants' pleading filed July 6, 1970, impact aid funds are not by law required to be concentrated for the benefit of pupils of any socio-economic level. Defendants have as a matter of policy concentrated the expenditure of impact aid funds in the low family-income areas of the city. Defendants should be allowed to count these expenditures toward equalization. The Advisory Statement of the Office of Education States:

"For the purpose of this policy statement regarding comparability, funds provided under P.L. 81-874 (Impact Aid Funds) will be considered the same as State and local funds in determining local expenditures." (Page 3, footnote 1).

The factors which influence the level of the per pupil teacher expenditures in any school may be usefully divided into three components:

- 1) The pupil-teacher ratio;

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\* See Richard Raymond, "Determinants of Quality of Primary and Secondary Public Education in West Virginia" in Journal of Human Resources, Fall 1968.



- 2) The average number of years of experience per teacher;
- 3) The average academic preparation of the teacher.

(Note that the last two components together determine the average pay per teacher since the District pay scale is determined by years of experience and degree level attained.) Whether per pupil teaching expenditures is a good proxy for quality of instruction depends on the importance of each of the three components in determining quality. The results of published studies on the factors influencing quality of education have been discussed. It is apparent that there is strong reason to doubt whether the years of service of teachers has any net positive effect on student achievement.

Common sense supports the studies. Although some experience may be advantageous, experience is not the only factor distinguishing old from young teachers. Younger teachers have been more recently exposed to training and therefore are more likely to be acquainted with innovations in teaching methods as well as changes in the subject matter. Consider, for example, teachers trained to teach the "new math" compared to teachers made to adapt to the "new math" after years of teaching the old. Another factor is that teacher compensation in the District relative to surrounding areas may have changed over time. Surely, this would be reflected in the excellence of the teachers who have stayed, relative to those who have left, as well as the individual qualifications of teachers who entered the system at different times. The same may be said with respect to Federal Government salaries viz a viz teacher salaries. The United States Office of Education is skeptical of the relation of years of service to educational quality, for it specifically asks for "The expense per pupil for instructional salaries, less amounts paid solely on the basis of longevity;" to determine comparability.





However, amounts paid solely for longevity have a very big effect on total teacher costs per pupil. As a hypothetical example, consider two schools with identical pupil-teacher ratios of 21 to 1 (the actual average for the city) where both schools have staffs who are all M. A.'s. If all the teachers have five years experience in one school and 20 years experience in the other, then under existing pay scales, teacher expenses per pupil would be \$742 in the latter and \$482 in the former -- a difference of \$260 per child. Yet some might feel that the lower cost schooling in this case would provide the child with a more ideal combination of teacher characteristics, namely advanced degree levels, some experience, yet young enough to be in touch with the latest developments in education.

It seems very likely that real teacher excellence may not be related to teacher salary within the District, or for that matter within any large school system with uniform pay scales which only award pay increments for longevity or degree level. In fact, one of the features of the Academic Achievement Project, designed by Dr. Kenneth Clark, is to identify those teachers who seem to do more for their students' progress and pay them accordingly, thereby abandoning the traditional salary plan prevalent through the nation that is based on longevity and formal training.

The Board of Education when it adopted the Academic Achievement Project recognized the critical role of the teacher in the educational program and agreed to undertake a massive examination of those factors which contribute "to the effectiveness of the classroom teacher through increasing professional competence, personal confidence and sustained effectiveness as those are reflected in the observable academic achievements of students." A thorough study of teacher training, the development of a system of differential staffing, establishing guidelines, teacher accountability and a totally new concept of teacher pay based on the productivity of the teacher is currently under way.





If the Court orders equalization of teaching costs, experimentation of any nature will be curtailed by either the letter of the decree or fear of violating the spirit of the decree. A specific example is the apparent incompatibility of plaintiffs' proposed order and implementation of the Clark Plan. This is ably discussed by Robert W. Hartman in an article appearing in the Washington Post on September 13, 1970, a copy of which is attached to this memorandum. Mr. Hartman says:

Under the Clark Plan teachers would be rewarded or penalized for the academic performance of their students. In his report, Clark stresses the need for change in the entire school system, not only in lower income areas. If the Clark plan brings about achievement gains in, say, lower-income area schools, the salary bill in those schools would rise as teachers are promoted to higher ranks on the basis of their students' achievement. Schools in which students' scores are not up to snuff will show a relative decline in salaries, as teachers are not promoted and are dropped from the system, being replaced by new recruits at presumably lower salary levels. In a properly functioning Clark-plan school system high salaries will be an indicator of good performance. And since salaries make up an overwhelming per cent of school expenditures, high expenditures in a school will denote achievement according to plan. The crux of the Clark plan is then that differences in expenditures must be maintained—they are the goad, or incentive, to improve school performance. In fact, Clark's proposal can be viewed as an attempt to make the school system into a competitive economy. Each firm (classroom) competes for the profits (increased wages) of the industry. To the teacher (entrepreneur) belongs the spoils!

Wright's edict posits an entirely different kind of industrial regulation. Each group of firms (schools) is allocated an equal amount of the profits without recourse to any performance measure. If one group of firms has a lot of old machines (teachers) with costly upkeep, they will get less money for other items or they will have to transfer some of the machines to other firms. Those firms with shiny new machines, that cost little to keep going, will get relatively more money for other purchases. Under the Wright plan, a school that succeeds in retaining its teachers through the years is rewarded (assuming that teachers continue to get salary increases for experience) by losing funds for non-salary purposes, while the school that starts each year with a batch of new recruits, would get extra funds for non-salary purposes. If the Clark plan were implemented along with the Wright order, the schools with the best achievement records would lose non-salary funds while the schools which perform most poorly will gain funds to bring their expenditure levels up to average.



Needless to say, these two plans are incompatible. If Judge Wright rules that District schools must equalize expenditures, the implementation of the Clark plan would be an unmitigated disaster. Teachers would be striving to raise their salaries through pupil achievement, while principals would be trying to hold achievement levels down. If too many teachers in one school building succeed, salaries will rise and principals will have to either transfer some of their best teachers or do without books, heat, or window repairs! The two plans are incompatible because they are derived from entirely different notions about what is wrong with the schools.

As a summary of all the preceding, a series of nine scatter diagrams is attached to the memorandum which can serve as an analysis of resource distribution throughout the school system. The scatter diagrams allow examination of all the schools in the system rather than an ad hoc and sometimes misleading examination of individual schools or sections. Each scatter diagram may be regarded as a visual representation of a correlation between two variables. One variable is plotted along the horizontal or "x" axis and the other along the vertical or "y" axis. The two variables are plotted for each elementary school. The number breaking into a circle identifies a given school, the code of schools and numbers appearing on a master data table following the diagrams. The dot within the broken circle shows the precise point on the diagram of a given elementary school.

Diagram No. 1 displays projected teacher expenditures per pupil from regular appropriations for fiscal 1971 against the 1959 median income level, adjusted for socio-economic integration, of the neighborhood wherein the school is located. The average expenditure is projected to be \$499. A line of 5% of average expenditures or \$25 is marked above and below the average. Those schools falling within the \$50 band width would be considered already "equalized" under the proposed order. Schools falling below the band would "benefit" by equalization. Schools falling above the band would "suffer" by equalization. Among the poorest schools (those where median family income is below \$4,500), 7 would benefit, but 19 would suffer.

A more detailed analysis of those pupils who would benefit or suffer from a decree requiring equalization is found in the following bar chart.

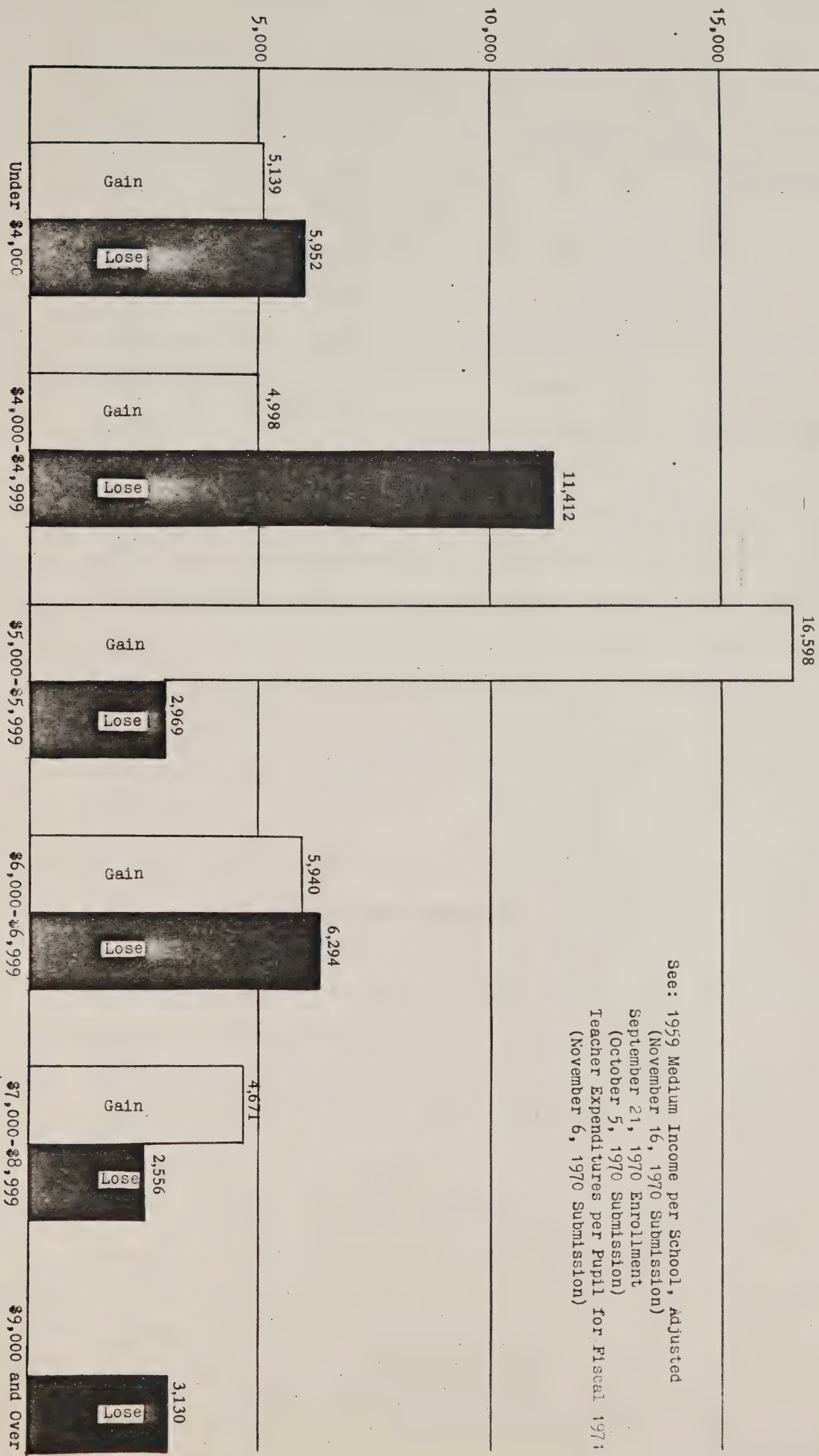




NUMBER OF PUPILS WHO WOULD GAIN AND LOSE WITH REDISTRIBUTION  
OF RESOURCES UNDER 5% TEACHING COST EQUALIZATION

See: 1959 Median Income per School, Adjusted  
(November 16, 1970 Submission)  
September 21, 1970 Enrollment  
(October 5, 1970 Submission)  
Teacher Expenditures per Pupil for Fiscal 1971  
(November 6, 1970 Submission)

Number of Pupils Affected by Proposed Equalization



1959 Median Income per School, Adjusted  
(November 16, 1970 Submission)





Over 17,000 pupils enrolled in schools with 1959 median income levels below \$5,000 would suffer the loss of instructional resources under the proposed equalization order. This is not surprising once it is realized that teacher expenditures per pupil is not related to school income levels. This is apparent upon examination of the diagram. If there were a significant correlation between teacher expenditures per pupil and school income level, as plaintiffs contend, the dots would move upward and to the right on the diagram. There is no such movement, which demonstrates that there is no significant correlation between expenditures and family income levels of pupils.

Notice that among the low expenditure schools are Savoy (105) which is a new school opened in 1970, McGogney (74) which was opened in 1966, Tubman (123) which is a new school opened in 1970. This is not surprising. New schools tend to be large which is conducive to better teacher utilization and, therefore, higher pupil-teacher ratios.

Diagram No. 2 is nearly identical to Diagram No. 1. It depicts the relation between teacher expenditures per pupil for fiscal 1970 and 1959 median income levels adjusted. The average expenditure of \$454 is lower than the projected average expenditure of \$499 for fiscal 1971. A correlation between expenditures and income levels would again be visually illustrated by a progression of dots upward and to the right, but this trend does not appear. Both of these scatter diagrams show that although there is a variation of teacher expenditures within each school income level, there is no persistent tendency for average teacher expenditures to rise with the level of income of the school. Consequently, the existing variations in per pupil expenditures do not appear to be discriminatory on the basis of economic level.

Diagram No. 3 shows the relation between income and average years of teaching experience. There appears to be no significant relation between these factors.

Diagram No. 4 plots estimated average teacher experience less longevity against school neighborhood median family income levels. No significant relation between income and teachers' academic preparation



appears. Academic preparation is indicated by an index which is in effect the average annual base pay per teacher in each school. If each teacher in each school were paid the starting salary for his degree level, then this would be the average salary for that school. The index therefore ignores longevity pay and can vary only because the degree mix of a school varies.

Estimated teacher expenditures minus longevity pay per pupil also exhibits no particular relationship to income, observing the scatter of dots in Diagram No. 5. Teacher expenditures minus longevity pay per pupil are preliminary figures, estimated by using available 1969-70 data on teacher academic preparation and September 21, 1970 enrollments. It can also be clearly seen in the diagram that teacher expenditures per pupil vary much less between schools when longevity pay is taken out. Meaningful comparisons between schools can be made using this measure, pursuant to the Office of Education Advisory Statement filed with this memorandum, since teachers' experience seems to play a negligible role in their effectiveness and yet accounts for a major part of pay differentials.

Diagram No. 6 is also a scatter diagram and shows little or no association between income and pupil-teacher ratios. Pupil-teacher ratios do vary throughout the system, but this variation is not associated with income level. It should be noted that some of the variation may be spurious. Data on September enrollments and numbers of teachers were used to calculate these pupil-teacher ratios. Since enrollments and teachers are not stabilized until later in the fall term, many of the extremes in the diagram will probably appear modified when the final figures are available. See footnote 2 in the master data table attached to this memorandum.

Diagrams No. 7 and No. 8 plot pupil-teacher ratio against school size or enrollment for September 21, 1970 (special Court-ordered census) and October 22, 1970 (regular annual census). A definite relationship between these variables appears. Contrast the slope of these points with the flatness of points on the preceding scatter diagrams plotting





teacher expenditures, teacher experience, teacher academic preparation, and pupil-teacher ratios against income levels of schools. Small enrollments offer less flexibility in classroom groupings, for there will be a limited number of pupils at each grade level. Small schools with dwindling enrollments tend to have abnormally low pupil-teacher ratios. In those cases, even the maintenance of a skeletal staff would lead to low ratios. In addition, since there is a limit to the number of schools that an itinerant teacher can service, the number of itinerant teachers serving these small and underpopulated schools may be disproportionate to enrollment. To achieve economies in these schools, a long range plan for consolidating some schools and perhaps closing some may be needed. Until then, it would be a mistake to confuse underutilization with a superior educational opportunity. That pupil-teacher ratios may legitimately vary with the school size is recognized by the Office of Education Advisory Statement.

The Court will notice that the Jackson School, which is west of Rock Creek Park, has a predominately black enrollment and a very low pupil-teacher ratio. Additional pupils were assigned to Jackson between September 21 and October 22, 1970 to better utilize this school building.

Diagram No. 9 displaying projected teacher expenditures per pupil for fiscal 1971 and school enrollment shows a negative slope, reflecting the same factors which underlie the relationship between enrollment and pupil-teacher ratios. The slope is lesser in magnitude than that found in pupil-teacher ratios against enrollment. A correlation between school size and teacher expenditure is contemplated by the Office of Education Advisory Statement. The correlation also contrasts with the absence of any correlation between teacher expenditures and income levels in Diagram No. 1 and Diagram No. 2.





## SUMMARY

The Court should not order further bussing from overcrowded to under-utilized schools, for overcrowding has been virtually eliminated:

-Only two elementary schools have enrollments that significantly exceed capacity whereas in 1965, 91 elementary schools had enrollments exceeding capacity.

-Currently there is a surplus of over 19,000 seats in the elementary schools based upon a 30-1 capacity ratio whereas in 1968 there was a city wide shortage of about 5,500 seats.

-Since 1968, defendants have constructed 648 new classrooms in permanent and demountable structures.

-For the first time since the 1964-65 school year, actual enrollment in the elementary schools of the District of Columbia has fallen below 90,000 pupils. The projected elementary school enrollment for the 1973-74 school year is around 81,000 pupils.

-While defendants continue to provide free bussing service from overcrowded to under-utilized elementary schools to volunteering pupils, the number of volunteers has declined from a high of over 1700 to about 1500 pupils.

-Parents of elementary school pupils appear reluctant to volunteer their children for bussing to distant schools for numerous reasons. Among these are the long time spent on the bus, leaving the neighborhood and missing companions, and getting up very early in the morning.

-Over ten years, the pro-rated cost of a demountable classroom is \$3,300 as compared with \$10,260 for the cost of bussing 30 pupils to an under-utilized school.



-Despite virtual elimination of overcrowding, projected teacher expenditures per pupil for fiscal 1971 vary among the elementary schools. But this variation is not related to the economic level of the school's neighborhood.

Defendants should not be required to devise a plan to equalize teaching costs to within 5% of a citywide average:

-The average of the average per pupil operating expenses out of regular funds for fiscal 1970 is \$754 for the elementary schools west of Rock Creek Park and is \$764 for the elementary schools, excluding Tubman, in the Model School Division. The true average is \$713 for the schools west of Rock Creek Park and \$677 for the Model School Division. The citywide true average expenditure is \$586.

-The racial and socio-economic mix has changed in the elementary schools west of Rock Creek Park as a result of volunteer bussing. Many of these schools have a majority of black pupils and the economic level of the pupil population has declined.

-Over 35,000, or 40% of the elementary school pupils in the District of Columbia qualify on the basis of economic need for a daily free lunch. The average teacher expenditure per pupil for these needy lunch children is projected to be \$508. The citywide average is projected to be \$499. The average expenditure for non-needy lunch children is projected to be \$494.

-Over 13,000 pupils receiving daily free lunches would suffer the loss of educational resources as a result of the proposed equalization order.

-Over 17,000 pupils enrolled in elementary schools with 1959 family income levels under \$5,000 would suffer the loss of educational resources as a result of the proposed equalization order.





-The proposed order of equalization would hamper educational experimentation generally, and in particular would preclude implementation of the defendants' Academic Achievement Project, the so - called Clark Plan.

-Scatter diagrams plotting certain variables for each elementary school in the District of Columbia demonstrate that teacher costs per pupil, total average years teaching experience, and teacher academic preparation do not vary in relation to the economic level of the school.

-Teacher-pupil ratios do not vary in relation to the economic level of the school. Teacher-pupil ratios do vary in relation to the size of the school enrollment because of differences in enrollments per grade in larger and smaller schools.

-On October 22, 1970 the citywide average pupil-teacher ratio was 20.9. It was 19.0 for the Model School Division and 18.3 for the elementary schools west of Rock Creek Park.

-The U. S. Office of Education does not consider teacher costs per pupil which include longevity pay to be a useful measure of educational opportunity. Several studies support this conclusion.

-The U. S. Office of Education will allow teacher costs less longevity pay and pupil-teacher ratios to vary in relation to the size of the school enrollment

#### CONCLUSION

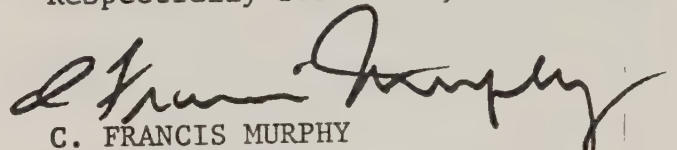
Based upon the foregoing, it is respectfully submitted that the Court should not order further bussing from overcrowded to underutilized elementary schools, for overcrowding has been virtually eliminated, and further bussing would not substantially narrow differences in teacher costs per pupil. Further, it is respectfully submitted that the Court should not order defendants to devise a plan

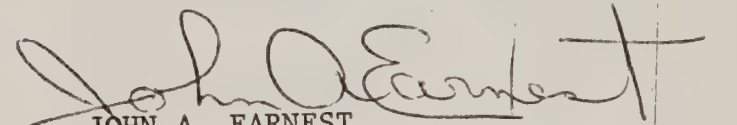


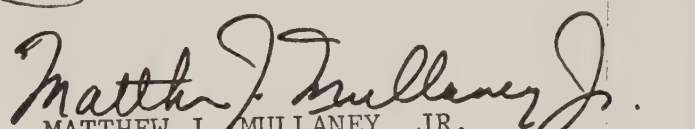


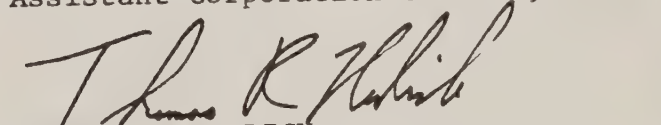
to equalize teaching costs to within 5% of the citywide average expenditure because there is a failure of proof of discrimination, because teaching costs are not a valid objective measure of educational opportunity, and because defendants have offered adequate justification for differences in teacher costs per pupil among the elementary schools of the District of Columbia. Finally, defendants ask the Court to read this memorandum in support of their motion to vacate the decree and to dismiss this civil action.

Respectfully submitted,

  
C. FRANCIS MURPHY  
Acting Corporation Counsel, D. C.

  
JOHN A. EARNEST  
Assistant Corporation Counsel, D. C.

  
MATTHEW J. MULLANEY, JR.  
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THOMAS R. NEDRICH  
Assistant Corporation Counsel, D. C.

Attorneys for Defendants  
District Building  
Washington, D. C. 20004



CERTIFICATE OF SERVICE

I hereby certify that a copy of Defendants' Memorandum to the Court together with the documents attached thereto was mailed, postage prepaid, to the attorneys for plaintiffs, intervenors, or movants at the addresses of record in this civil action, this 17th day of November, 1970

*Matthew J. Sullivan Jr.*  
Assistant Corporation Counsel, D.C.



IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA

JULIUS W. HOBSON, et al., :  
 :  
 Plaintiffs, : Civil Action No. 82-66  
 :  
 v. :  
 :  
 CARL F. HANSEN, et al., :  
 :  
 Defendants. :

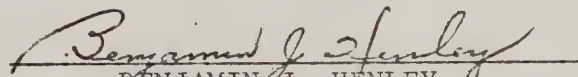
AFFIDAVIT OF BENJAMIN J. HENLEY

DISTRICT OF COLUMBIA, ss:

Benjamin J. Henley, being duly sworn on oath, deposes and says that he is the Vice Superintendent of Public Schools of the District of Columbia and has occupied that position since October 1, 1970. Prior to that date, he was Acting Superintendent of Public Schools of the District of Columbia. In this latter capacity he was also the Chief State School Officer for the District of Columbia.

On or about September 21, 1970, he received, in his capacity as Chief State School Officer, a memorandum dated September 18, 1970 from the Office of Education of the Department of Health, Education and Welfare regarding the Development of a Policy of Comparability between Title I and non-Title I schools under the Elementary and Secondary Education Act, as amended.

A true and correct copy of the memorandum from the Office of Education is attached to this affidavit.

  
BENJAMIN J. HENLEY

Subscribed and sworn to before me this 16<sup>th</sup> day of November, 1970.

  
Notary Public, D. C.

My Commission expires: October 14, 1975







DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
OFFICE OF EDUCATION  
WASHINGTON, D.C. 20202

SEP 18 1970

Our Reference: ESEA Title I  
DCE/OD

MEMORANDUM TO CHIEF STATE SCHOOL OFFICERS

Subject: Advisory Statement on Development of Policy on Comparability

Prior to the passage of P.L. 91-230 (the 1970 amendments to the Elementary and Secondary Education Act); Program Guide #57 was issued to clarify the requirements for achieving comparability. It is the purpose of this memorandum, which will supersede Program Guide #57 following promulgation of forthcoming regulations, to inform you of the revisions in the comparability policy, pursuant to Section 109 of P.L. 91-230.

Briefly, P.L. 91-230 and this policy statement differ from provisions of Program Guide #57 in the following ways:

1. Section 109 of P.L. 91-230 requires a report on comparability on or before July 1, 1971. This policy statement recommends that local educational agencies submit their report to their State educational agency by May 1, 1971, in order that such data may be considered in reviewing project applications. Starting with applications for programs to be carried out during the 1971-72 school year, local educational agencies whose reports indicate a lack of comparability shall project staff assignments and budgets as they relate to the comparability criteria described below.
2. Section 109 of P.L. 91-230 provides that funds may not be withheld from a local educational agency for non-compliance with the comparability clause until after July 1, 1972.



3. Section 109 of P.L. 91-230 provides that services, taken as a whole, for each project area in a district must be at least comparable to services being provided in areas of that district which are not receiving Title I funds. Consequently, this policy statement does not provide the option given States in Program Guide #57 on reporting either all instructional expenses (Criterion B) or expenses for instructional salaries only (Criterion C).

4. This policy statement includes a special provision not contained in Program Guide #57. Pay for longevity (years of teaching) is not considered a factor in determining comparability.

5. This policy statement contains a special provision whereby a State educational agency may choose not to require the reporting of instructional expenditures from districts receiving small Title I allotments. Districts with only one school serving the same grade span (e.g., primary, intermediate, secondary), are not required to submit any data.

6. This policy statement recommends the following timetable:

January 1, 1971

Deadline for State educational agency to submit for approval by the Commissioner any comparability criteria it deems appropriate beyond those minimum criteria described in this policy statement. For subsequent years, additions or amendments to State-developed criteria may be submitted for approval at any time but may not be implemented unless approved.

May 1, 1971

Recommended deadline for local educational agency to submit to the State educational agency data on comparability for the 1969-70 school year. If such data does not demonstrate comparability for the period reported, the local educational agency shall submit, in addition, a plan indicating how comparability will be achieved no later than June 30, 1972.



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December 31, 1971	Recommended deadline for local educational agency to submit to the State educational agency a report containing comparability data for the 1970-71 school year. Such data will be considered during the Spring 1972 project application review period.
Date of submission of Title I application, Spring 1972 and each Spring thereafter	Local educational agency submits to the State educational agency its application for projects to be conducted during the 1972-73 school year. Where data submitted by December 31, 1971, indicate comparability, the application shall contain an assurance that such comparability will be maintained. Where such data indicate lack of comparability, the application will include projected staff assignments and budgets as they relate to comparability criteria and an assurance that such projected staff assignments and budgets will be maintained. This procedure will be repeated in subsequent annual applications.
July 1, 1972	The State educational agency may withhold funds from a local educational agency which is not in compliance with comparability regulations.
December 31, 1972 and each December 31 thereafter	Recommended annual deadline for report of actual data for school year which ends in that calendar year. (E.g., by December 31, 1972, data for the 1971-72 school year should be submitted.)

What Comparability Means

Title I funds must not be used to supplant State and local funds which are already being expended for public educational programs and services in the project areas or which would be expended in those areas if the services were comparable to those for non-project areas. Within a district, instructional services provided with State and local funds<sup>1/</sup> for children

<sup>1/</sup> For the purpose of this policy statement regarding comparability, funds provided under P.L. 81-874 will be considered the same as State and local funds in determining local expenditure.





in project areas must be comparable to those services provided for children in non-project areas. Services that are already available or that will be made available to children in the non-project areas must be provided on at least an equal basis in the project areas with State and local funds.

Responsibilities of State Educational Agencies for Achieving Comparability

For projects which will be carried out after June 30, 1972, the State educational agency shall determine that, during the project period, instructional programs and services supported by State and local funds at each school of the local educational agency serving a Title I project area will be superior or equal to those programs and services at the schools of that agency which are not receiving Title I funds.

1. State responsibilities with respect to local educational agencies.

a. Reports

In order to determine a district's compliance with this requirement, the State educational agency shall require that each local educational agency submit a report containing data on comparability by the recommended deadline of May 1, 1971. If such data does not affirmatively demonstrate to the State educational agency that a comparability of services provided with State and local funds currently exists in the school district between project and non-project areas, the local educational agency shall also submit by May 1, 1971, a plan to achieve such comparability no later than June 30, 1972.

This first report or plan should provide information for each school in the district, based on data from the 1969-70 school year. State educational agencies are responsible for determining whether the comparability data or plan to achieve comparability meets Federal and State requirements. Subsequent annual reports will be submitted by a date which the State educational agency will determine but which is recommended to be no later than the end of the calendar year in which the school year ends. This will ensure that data from the past school year are available during the spring period when project applications for the upcoming school year are reviewed.



In addition, local educational agencies will submit with each Title I application for the period beyond June 30, 1972, the following as appropriate:

Where actual data for the second fiscal year preceding the period to be covered by the application indicated comparability, an assurance will be made that such comparability will be maintained. For instance, for a fiscal year 1973 application, fiscal year 1971 data will be used. Where such data indicates a lack of comparability, the application shall include projected staff assignments and budgets with an assurance that such projections will be maintained.

The State educational agency need not require reports from local educational agencies which have only one school serving the grade span at which it provides Title I services. Agencies with schools having Title I allocations of less than \$50,000, but which have at least one non-Title I school serving the same grade span shall report only on staff assignments (i.e., average number of assigned certified classroom teachers, assigned other certified instructional staff, assigned non-certified instructional staff, and average daily membership) and must submit an assurance of comparability.

b. Compliance

For any period ending after June 30, 1972, the State educational agency shall withhold or defer application approval or payment of funds if a local educational agency fails to file necessary data assurances and projections as previously defined. Such action will be taken only after appropriate notice and an opportunity for a hearing as required by the Title I regulations.

c. Audit

State educational agencies shall perform such reviews and audits as may be necessary to ensure that the local educational agency correctly represents the instructional services provided at its schools.

d. Expenses

The State educational agency may, where reasonable and necessary, allow a local educational agency to use Title I funds to cover reasonable costs of establishing record-keeping procedures to meet reporting requirements.





2. State responsibilities with respect to the Federal Government..

a. Reports

Each State educational agency shall report to the Commissioner such information as he may request regarding the compliance of local educational agencies with comparability requirements.

b. Development of criteria

A State educational agency may establish comparability criteria beyond those minimum criteria described below. Initial State-developed criteria must be submitted to the Commissioner for approval by January 1, 1971.

Criteria for Demonstrating Comparability

The comparability requirements issued by a State educational agency to local educational agencies under its jurisdiction shall contain, at a minimum, the following data for each school included in the project application and the same average data for non-project area schools by corresponding grade span:

1. Average number of assigned certified classroom teachers.
2. Average number of assigned other certified instructional staff.
3. Average number of assigned non-certified instructional staff.
4. Amounts expended for instructional salaries (including amounts paid for step increases or other increases for length of service).
5. The amount included in expenses for instructional salaries which was paid solely because of length of service without regard to the quality of work.
6. Expenses incurred for other instructional costs (textbooks, library books, audio-visual materials, and other teaching supplies).
7. Average daily membership.
8. Such other data as the State educational agency may require..





The State educational agency shall base its determination of compliance with the comparability requirement on:

1. The ratio of pupils to assigned certified classroom teachers;
2. The ratio of pupils to assigned other certified instructional staff;
3. The ratio of pupils to assigned non-certified instructional staff;
4. The expense per pupil for instructional salaries, less amounts paid solely on the basis of longevity; and
5. The expense per pupil for other instructional costs.

The local educational agency's Title I schools must have equal or lower ratios and equal or higher expenditures than the corresponding averages for its non-Title I schools serving the same grade span (e.g., all elementary schools, all junior high schools, all high schools). Ratios and expenditures for each Title I school shall be considered "equal" to the averages for non-project area schools if they are within five percent of those averages in each category.

Criteria for Meeting Supplementing and Non-Supplanting Requirement

The State educational agency shall find a local educational agency in compliance with the requirement against supplanting if the local agency either:

1. Does not use Title I funds to support a service which has been supported previously by funds from State or local sources, or
2. Establishes, with respect to funds from State and local sources, that both the per pupil expenditure for instructional services and the proportion of expenditures for instructional services (calculated on a per pupil basis) spent at the schools serving its Title I project areas will be maintained at levels at least equal to the levels which prevailed before State and local support for the service to be supported by Title I funds was discontinued.

Each State educational agency shall require a local educational agency to submit with its Title I application:

1. A factual description of the services provided with funds from State and local sources at both its Title I and non-Title I schools that are similar to those which it proposes to support with Title I funds; and





2. Either a statement that none of the services to be supported with Title I funds have in the past been supported by funds from State or local sources, or such information as the State educational agency may require in order to determine that the local educational agency is maintaining its prior level of effort at the Title I schools.

Each State educational agency will take any necessary action, including the routine monitoring of activities of local educational agencies and investigations in response to complaints, to determine if its local educational agencies are complying with the supplementing and non-supplanting requirement.

Points of Clarification and Definitions for Criteria on Comparability, Supplementing, and Supplanting

1. Funds from State and local sources include all funds which the local educational agency receives from public sources within its State.
2. Instructional salaries include the salaries paid instructional staff directly and the indirect payroll expenses incurred by a local educational agency because of the employment of an instructional staff member. This definition does not include amounts paid for longevity. ✓
3. Instructional services include the services of instructional staff members (principals, consultants, supervisors, teachers, school librarians, audiovisual, guidance, psychological, and television instructional personnel, secretarial and clerical assistants, and paraprofessional staff, such as teacher aides and student teachers) and the provision of textbooks, school libraries, audiovisual materials, and teaching supplies.
4. Non-Title I schools are the schools of a local educational agency which serve attendance areas not receiving Title I funds.
5. Title I schools are the schools which serve attendance areas designated by the local educational agency as project areas to receive Title I services. Private schools whose children participate in Title I activities are not included.
6. The State educational agency may wish to consider in its criteria the differences between small and large schools within a district. There may be a variance in per pupil instructional expenditures according to size of school. ✓

1. The first of these is the fact that the American Medical Association is a voluntary association of physicians and surgeons. It is not a government agency, nor is it a religious organization. It is a purely professional organization, and its members are bound by the same rules and regulations as any other professional organization.

2. The second of these is the fact that the American Medical Association is a national organization. It is not a local or state organization, nor is it a regional organization. It is a national organization, and its members are bound by the same rules and regulations as any other national organization.

3. The third of these is the fact that the American Medical Association is a non-profit organization. It is not a for-profit organization, nor is it a charitable organization. It is a non-profit organization, and its members are bound by the same rules and regulations as any other non-profit organization.

4. The fourth of these is the fact that the American Medical Association is a democratic organization. It is not a hierarchical organization, nor is it an autocratic organization. It is a democratic organization, and its members are bound by the same rules and regulations as any other democratic organization.

5. The fifth of these is the fact that the American Medical Association is a scientific organization. It is not a religious organization, nor is it a philosophical organization. It is a scientific organization, and its members are bound by the same rules and regulations as any other scientific organization.

6. The sixth of these is the fact that the American Medical Association is a humanitarian organization. It is not a selfish organization, nor is it a narrow-minded organization. It is a humanitarian organization, and its members are bound by the same rules and regulations as any other humanitarian organization.

7. The seventh of these is the fact that the American Medical Association is a progressive organization. It is not a conservative organization, nor is it a reactionary organization. It is a progressive organization, and its members are bound by the same rules and regulations as any other progressive organization.

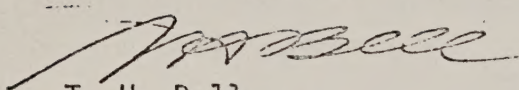
8. The eighth of these is the fact that the American Medical Association is a patriotic organization. It is not a foreign organization, nor is it a disloyal organization. It is a patriotic organization, and its members are bound by the same rules and regulations as any other patriotic organization.

9. The ninth of these is the fact that the American Medical Association is a loyal organization. It is not a disloyal organization, nor is it a traitorous organization. It is a loyal organization, and its members are bound by the same rules and regulations as any other loyal organization.



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7. To be eligible for Title I funding of summer sessions, the local educational agency must demonstrate that its project area schools were comparable to those in non-project areas during the second previous school year.



T. H. Bell  
Acting U.S. Commissioner of Education

Copies to: State Title I Coordinators, ESEA



THE UNIVERSITY OF CHICAGO

TO THE FACULTY OF THE DIVISION OF THE PHYSICAL SCIENCES  
FROM THE DEPARTMENT OF CHEMISTRY  
SUBJECT: A REPORT ON THE PROGRESS OF THE RESEARCH  
DURING THE YEAR 1954

REPORT OF THE RESEARCH GROUP ON THE CHEMISTRY OF  
THE SOLID STATE

PRESENTED BY THE RESEARCH GROUP ON THE CHEMISTRY OF  
THE SOLID STATE